



# Openness to (Psychedelic) Experience

A Flatiron Phase 3 Project  
by Jordan Loewen-Colón

# Today's Agenda



Business Problem



Goals



Data



Methods



Results



# The Problem

The MindSpectrum Research Institute, is deeply engaged in groundbreaking work involving the clinical trials of psychedelic-assisted therapies. The institute prefers a focused approach, favoring a smaller, more reliable group of participants who are genuinely likely to experiment with psychedelics, rather than a larger group with unpredictable inclinations.

# Primary Goals



## Develop

Develop a predictive model that targets psychedelic use using personality traits.



## Aim

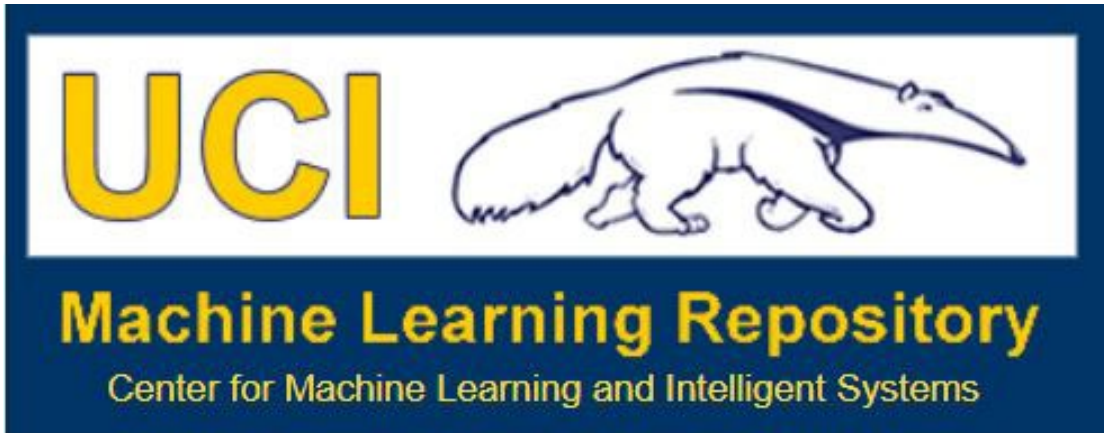
Aim to minimize false positives in identifying potential trial participants.



## Focus

Focus on 'precision' as the key performance indicator for our models.





## Drug consumption (quantified) Data Set

Download: [Data Folder](#), [Data Set Description](#)

**Abstract:** Classify type of drug consumer by personality data

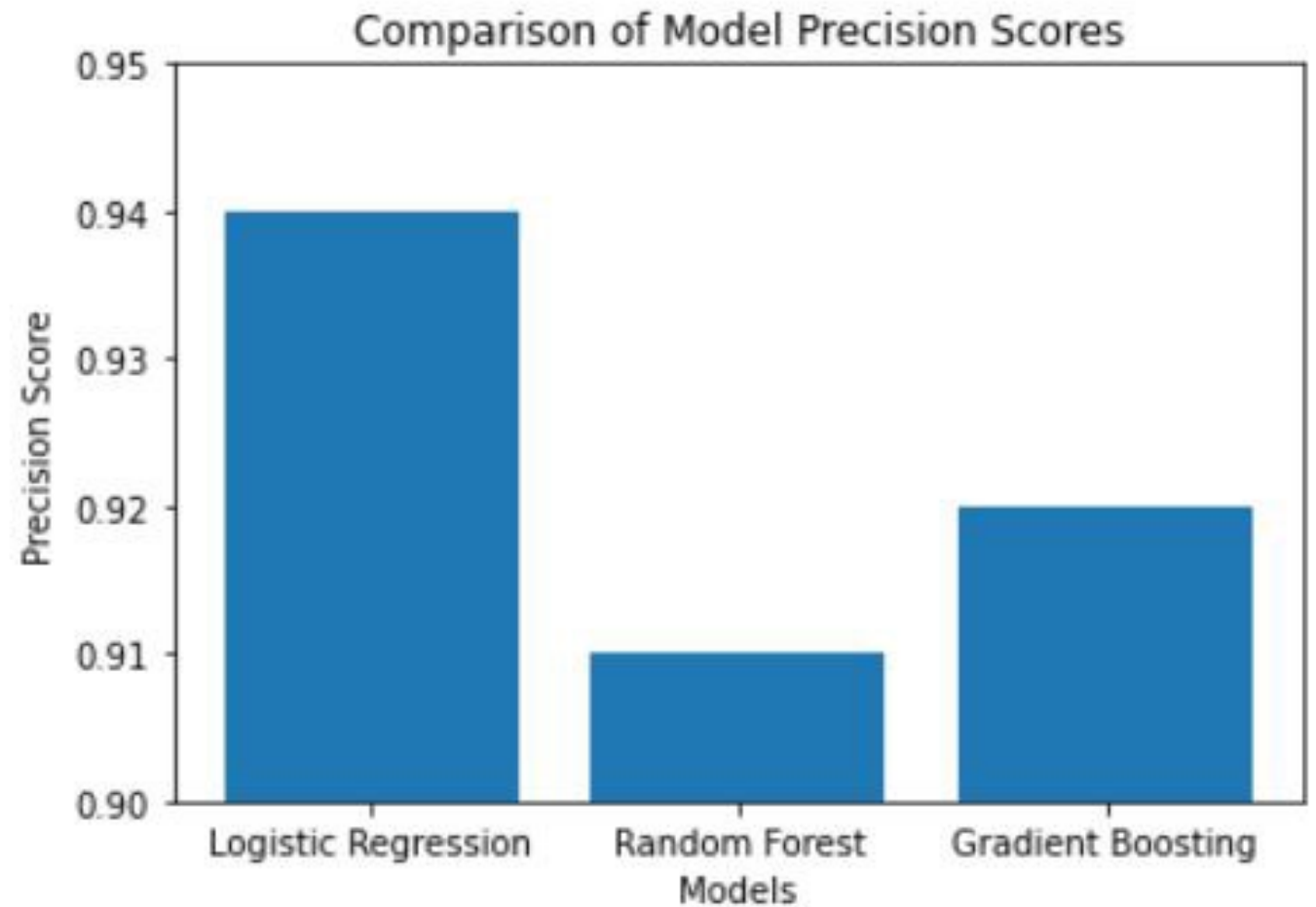
Data Set Characteristics:	Multivariate	Number of Instances:	1885	Area:	Social
Attribute Characteristics:	Real	Number of Attributes:	32	Date Donated	2016-10-17
Associated Tasks:	Classification	Missing Values?	N/A	Number of Web Hits:	201873

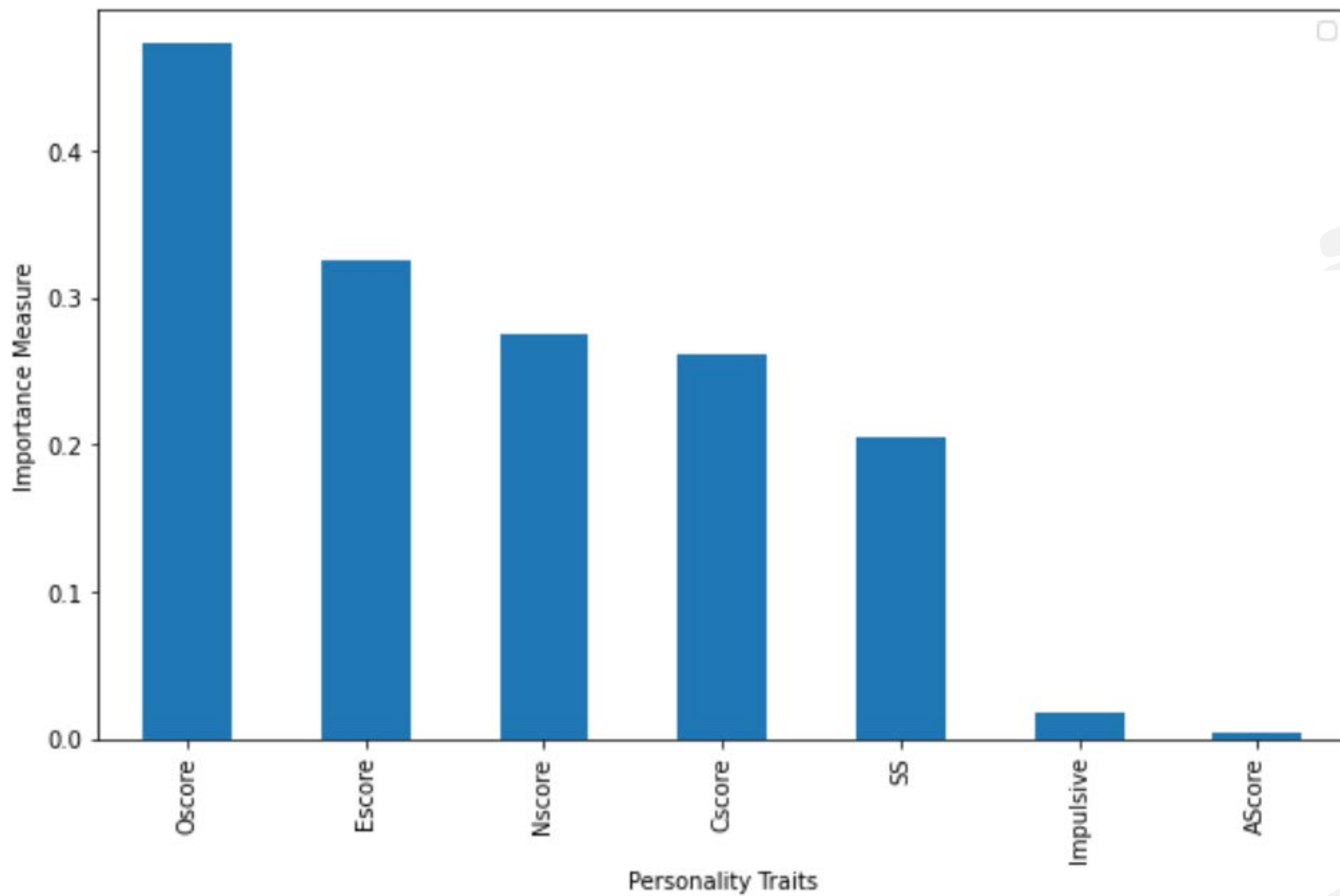
# The Data

- The dataset has 1884 entries and 31
- The personality scores (6:12) is measured on a Likert-based scale ranging from 0 (“Strongly Disagree”) to 4 (“Strongly Agree”) and then rendered as a float.
- The demographics have various sub categories, and the drug values are measured by recency (if ever) the substance has been consumed
  - CL0 being never used, and CL6 being used in the last day.

# Results

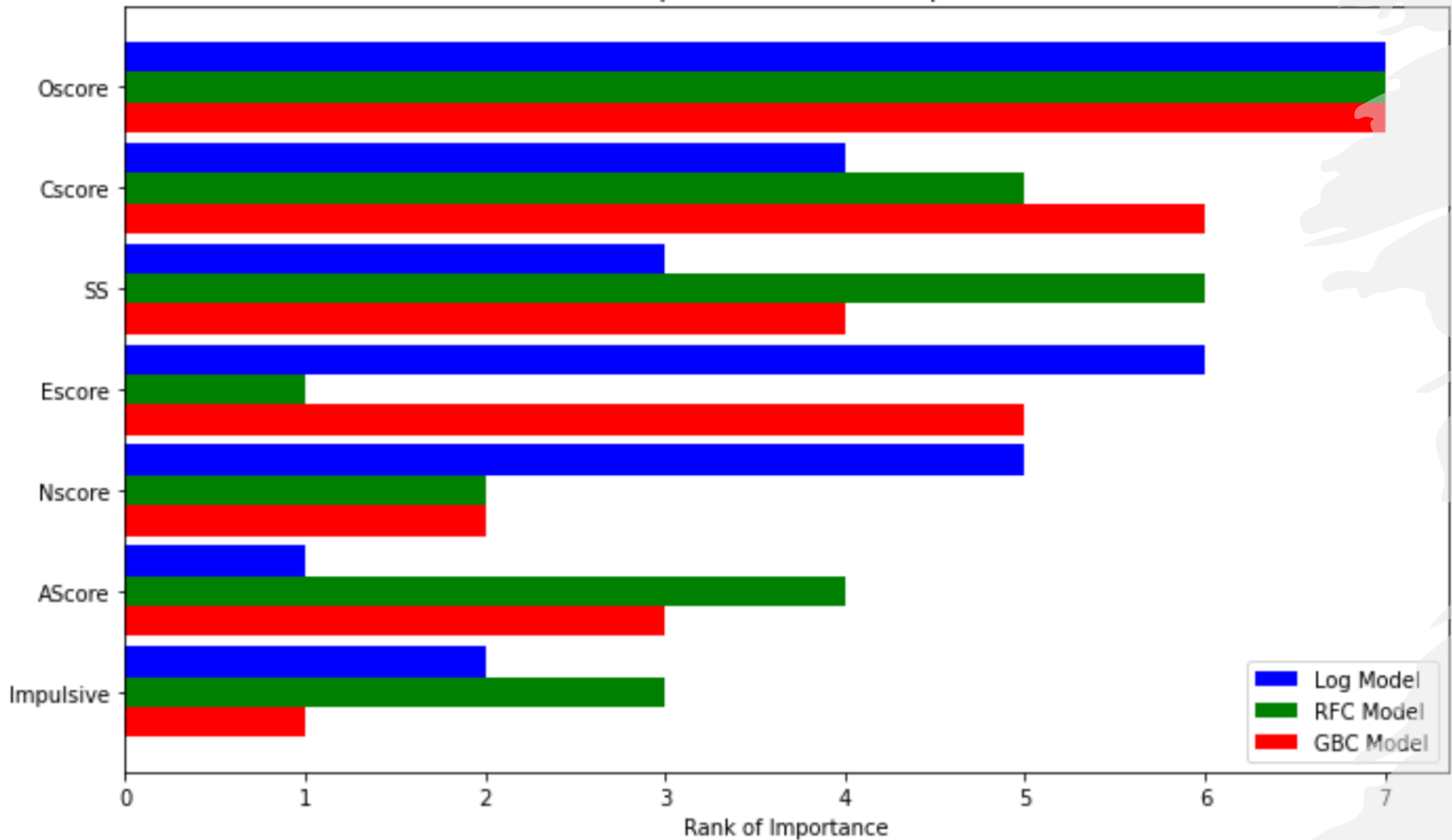
The logistic regression had the highest precision





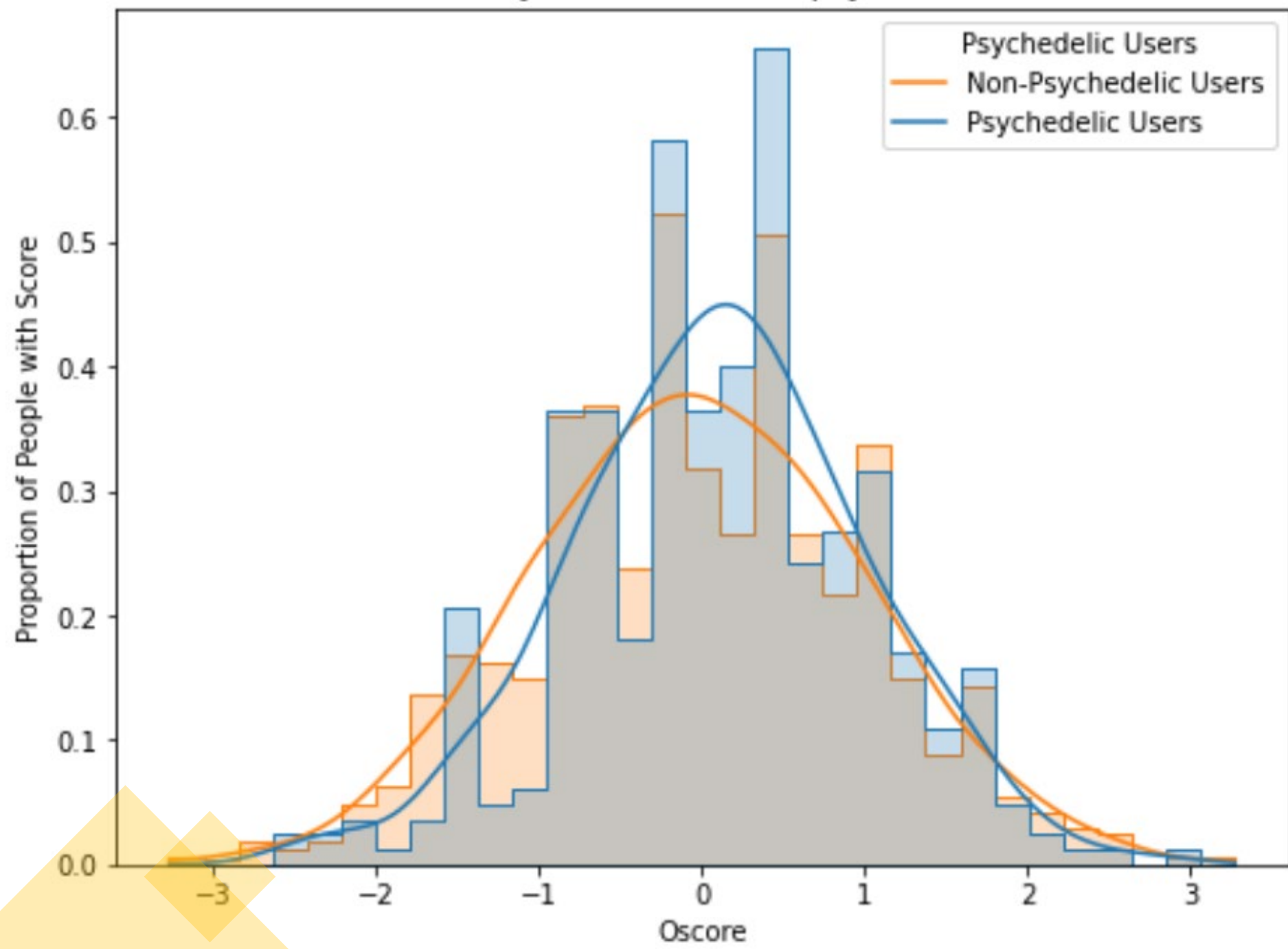
Rank Comparison of Feature Importance

Personality Trait Values





Oscores of Psychedelic and Nonpsychedelic Users



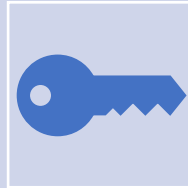
Oscore does  
not appear  
until 29

feature	coefficient	rank
Legalh_CL0	1.791500	1
Nicotine_CL0	1.595782	2
Amyl_CL0	1.542390	3
Coke_CL0	1.376952	4
Amphet_CL0	1.343170	5
Alcohol_CL0	1.225124	6
Amyl_CL1	1.063582	7
Coke_CL1	1.047385	8
Amphet_CL1	1.013011	9
Nicotine_CL3	0.983424	10

# Summary



Above 90% precision rate  
among all three models.

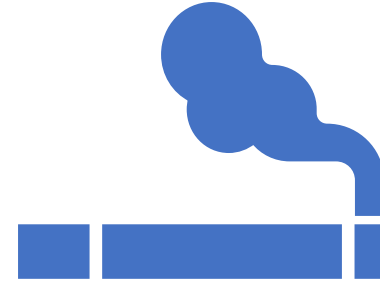


Oscore is key factor

# Recommendations



#1 Incorporate the assessment of Oscore into the screening process to further refine the selection of potential participants.



#2 Target higher Oscores and individuals who have never having taken legal highs, nicotine, or amyl nitrites.



Thank You

Jordan Loewen-Colón  
[jbloewen@syr.edu](mailto:jbloewen@syr.edu)