



Openness to (Psychedelic) Experience

A Flatiron Phase 3 Project
by Jordan Loewen-Colón

Today's Agenda



Business Problem



Goals



Data



Models & Results



Summary and Recommendations



The Problem

The MindSpectrum Research Institute, is deeply engaged in groundbreaking work involving the clinical trials of psychedelic-assisted therapies. The institute needs participants for its next study and wants 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.



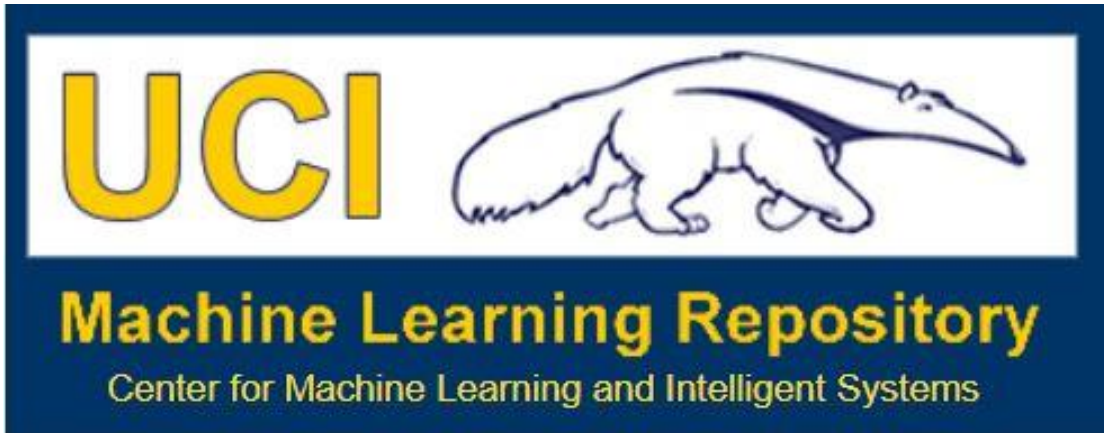
Aim

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

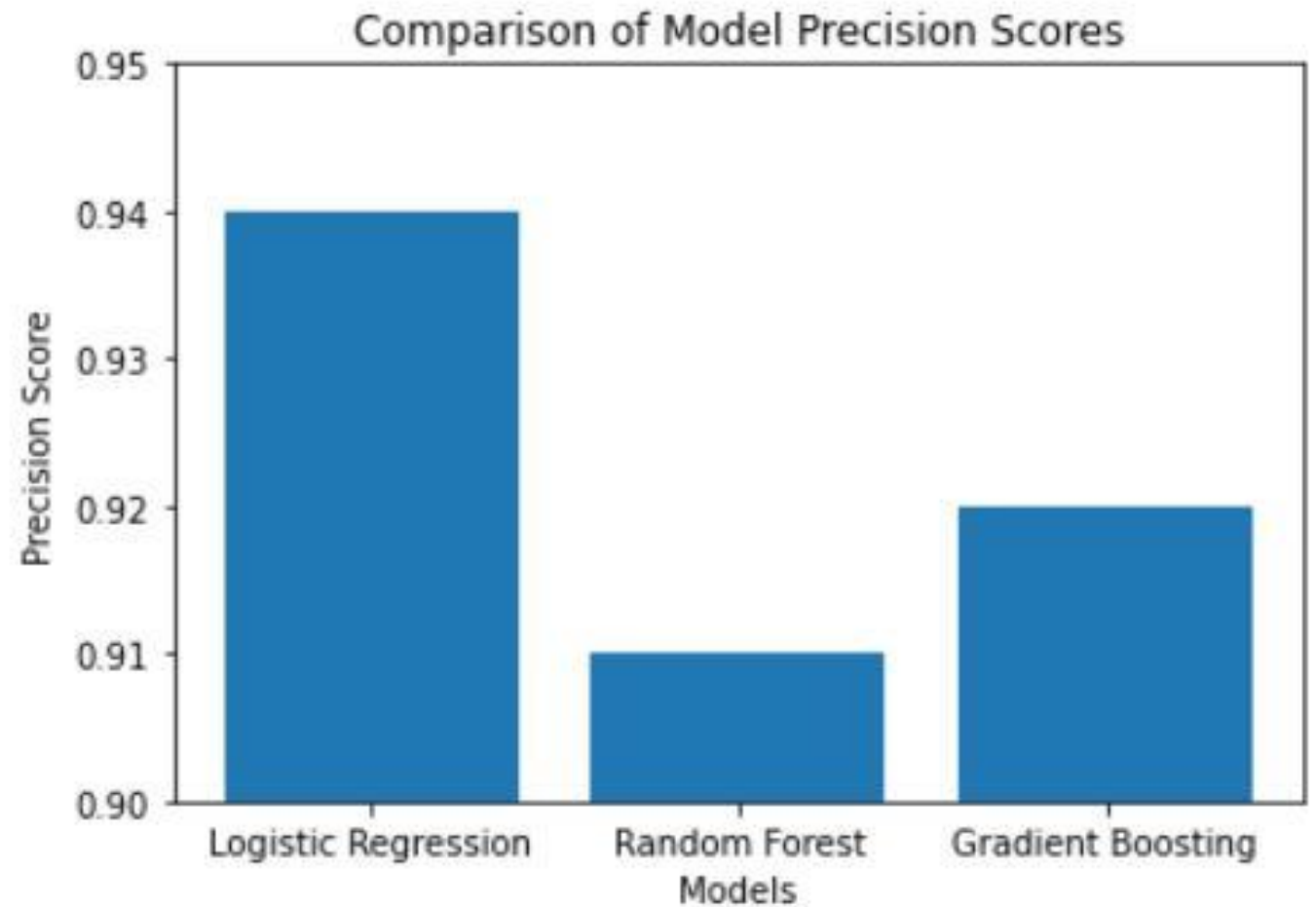
Data Set Characteristics:	Multivariate	Number of Instances:	1885	Area:	Social
Attribute Characteristics:	Real	Number of Attributes:	32	Date Donated	2016-10-17
Associated Tasks:	Classification	Missing Values?	N/A	Number of Web Hits:	201873

The Data

- The dataset has 1884 entries and 31 columns
- The personality scores (6:12) are 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) that the substance has been consumed
 - CL0 being never used, and CL6 being used in the last day.

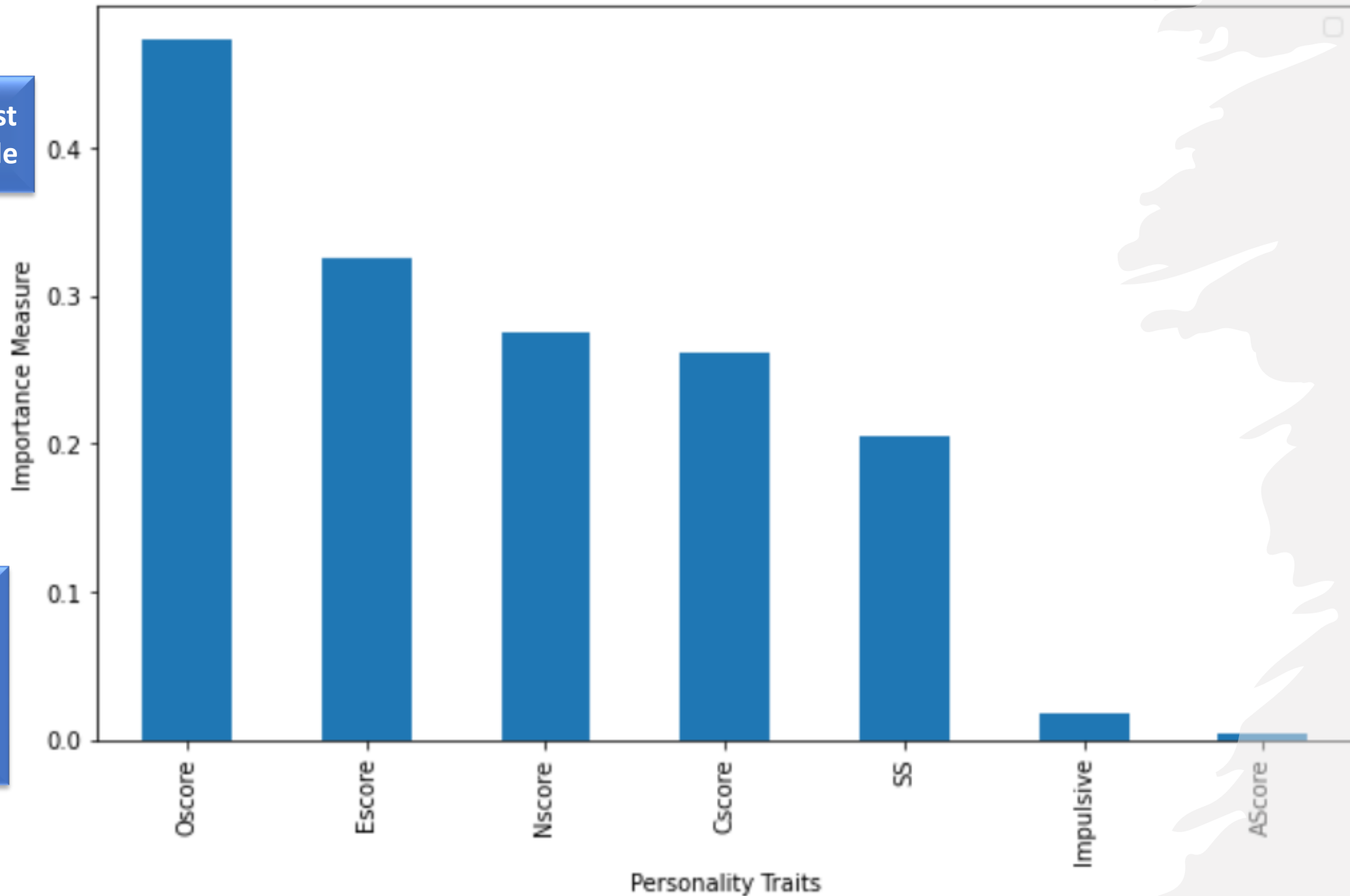
Results

The logistic regression had the highest precision



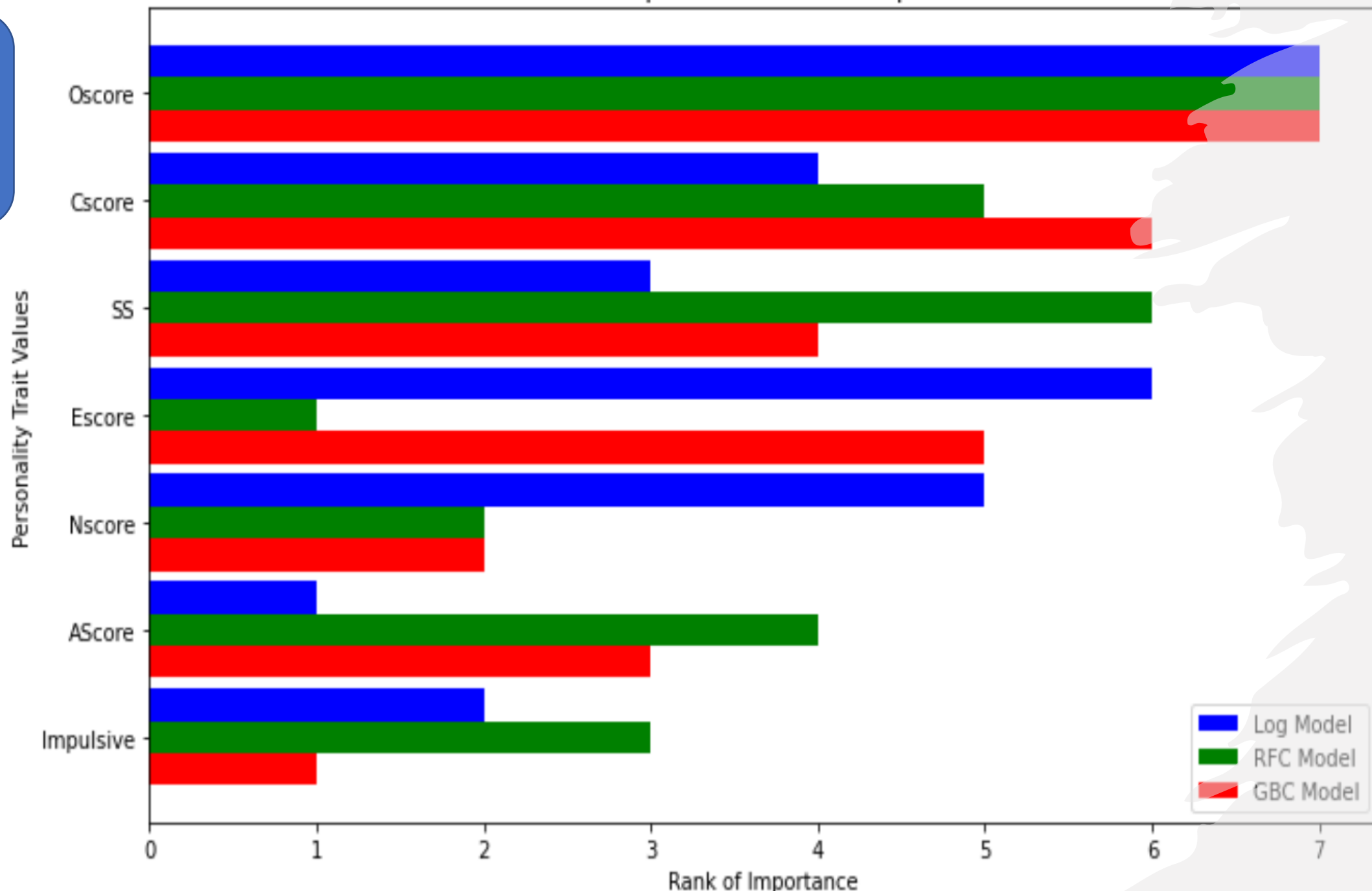
Oscore has the largest
Coefficient magnitude

Of the personality
traits, it
Has the greatest
predictive impact

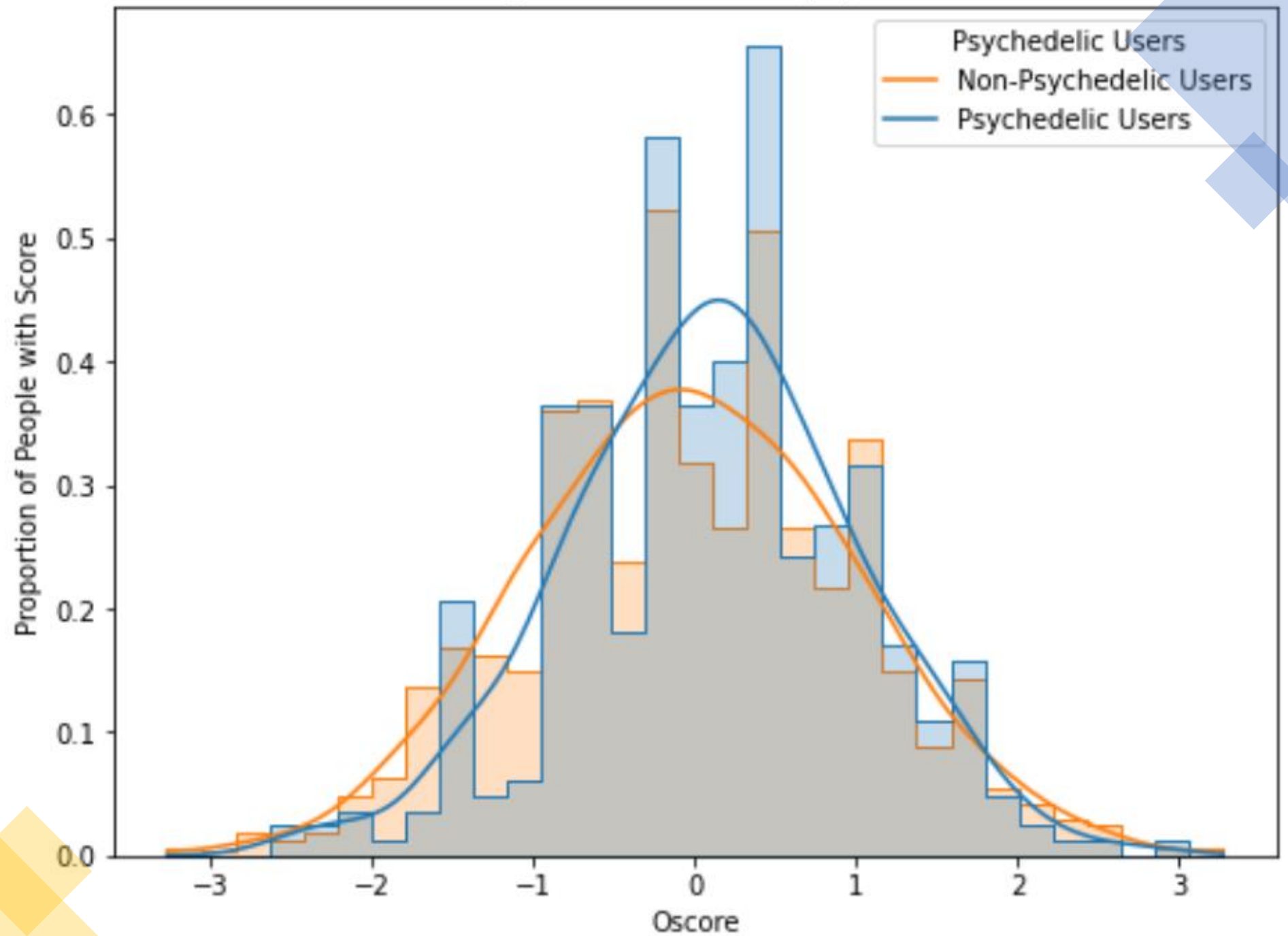


Rank Comparison of Feature Importance

All three models
agreed the
Oscore was the
most important
personality factor



Oscores of Psychedelic and Nonpsychedelic Users



Psychedelic users are more likely to have a higher Oscore than non psychedelic users

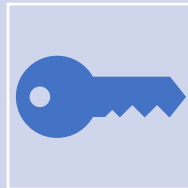
Oscore does
not appear
until 29

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 is great!

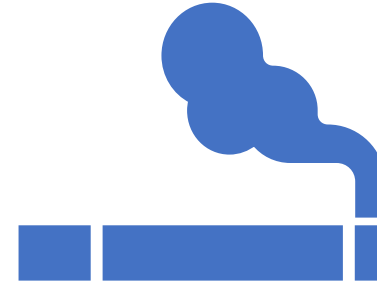


Oscore is a key factor, but not sufficient

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

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