

# **Latino Trump Support: ML Analysis Summary CMPS 2016 | Random Forest Classification**

## **Study Overview**

DV: Trump vote (1) vs Non-Trump vote (0) among Latino voters

Data: CMPS 2016, Latino respondents who voted

Method: Random Forest (500 trees, balanced class weights)

## **Sample Characteristics**

Total Latino Voters:	3,001
Trump Voters (DV=1):	539 (18.0%)
Non-Trump Voters (DV=0):	2,462 (82.0%)
Features (one-hot encoded):	1,517
Train/Test Split:	80/20 stratified

## **Model Performance**

### **Full Model (all 1,517 features)**

Test ROC-AUC: 0.9383

### **Non-Partisan Model (1,471 features)**

Test ROC-AUC: 0.8736

AUC Drop: 0.0647 (6.9% relative)

Note: Non-partisan model excludes 46 variables measuring party ID, ideology, and candidate favorability ratings.

## **Key Findings**

1. Trump favorability is strongest single predictor
2. Party ID and partisan leanings dominate full model
3. Removing partisan vars reduces AUC by only 6.9%
4. Non-partisan model reveals immigration attitudes:
  - Views on immigration levels (increase/decrease)
  - Citizenship pathway for undocumented
  - Attitudes toward hearing Spanish spoken
  - Support for deportation policies
5. Strong predictive power (AUC 0.87) without partisan vars

## **Top 30 Predictors - Full Model (AUC: 0.9383)**

### **Ranks 1-15**

<b>Rank</b>	<b>Feature</b>	<b>Importance</b>	<b>Std</b>
1	C4_(4) Very unfavorable	0.017	0.0033
2	C242_HID_(2) Democratic Party	0.0062	0.0021
3	L46_(2) Democrat	0.0047	0.0025
4	C2_(4) Very unfavorable	0.0029	0.002
5	L266_(2) Democrats	0.0022	0.0016
6	C41_(5) Strongly disagree	0.0021	0.0007
7	C9_(4) Very unfavorable	0.002	0.0018
8	C25_(2) Democrat	0.0019	0.0014
9	C337_(2) Increase	0.0016	0.0008
10	C4_(2) Somewhat favorable	0.0015	0.0009
11	C2_(3) Somewhat unfavorable	0.0015	0.0005
12	C142_(3) Bothers me a lot	0.0009	0.0006
13	C115_(4) Never	0.0009	0.0004
14	C114_(4) Never	0.0008	0.0004
15	C45_(5) Strongly disagree	0.0008	0.0004

## Top 30 Predictors - Full Model (AUC: 0.9383) Ranks 16-30

Rank	Feature	Importance	Std
16	L267_(2) Democrats	0.0007	0.001
17	C3_(4) Very unfavorable	0.0007	0.0012
18	C248_(3) A little	0.0007	0.0004
19	C141_(4) Somewhat support deporting th	0.0006	0.0002
20	BLA206_(4) Strongly disagree	0.0006	0.0005
21	C158_(02) Should not	0.0006	0.001
22	C338_(2) Increase	0.0006	0.0004
23	C109_(4) Not at all as an outside	0.0005	0.0002
24	SC2000_PERCENTNOTCITIZEN	0.0005	0.0002
25	C258_(2) No	0.0005	0.0003
26	C256_(2) No	0.0005	0.0002
27	C111_(4) Never	0.0005	0.0003
28	DP2000_PERCENTHOUSEHOLDSVAC	0.0005	0.0002
29	BLA207_(4) Strongly disagree	0.0005	0.0008
30	L46_(3) Neither party is better than th	0.0005	0.0003

## Top 30 Predictors - Non-Partisan Model (AUC: 0.8736) Ranks 1-15

Rank	Feature	Importance	Std
1	C41_(5) Strongly disagree	0.0062	0.0023
2	C337_(2) Increase	0.0059	0.0025
3	C158_(02) Should not	0.0057	0.0023
4	C142_(3) Bothers me a lot	0.004	0.0016
5	C38_(3) They should be required to lea	0.0038	0.0014
6	C228_(5) Strongly oppose	0.0038	0.0025
7	C45_(5) Strongly disagree	0.0036	0.0012
8	BLA207_(4) Strongly disagree	0.0034	0.0022
9	C115_(4) Never	0.0028	0.001
10	C337_(3) Stay the same	0.0028	0.0009
11	C40_(5) Strongly disagree	0.0024	0.001
12	C111_(4) Never	0.0021	0.001
13	C112_(4) Never	0.0021	0.0006
14	L241_(5) Strongly oppose	0.0021	0.001
15	C42_Other	0.0021	0.0013

## Top 30 Predictors - Non-Partisan Model (AUC: 0.8736) Ranks 16-30

Rank	Feature	Importance	Std
16	L294_Other	0.0016	0.001
17	C338_(2) Increase	0.0014	0.0009
18	C141_(4) Somewhat support deporting th	0.0014	0.0006
19	C45_(4) Disagree	0.0013	0.0009
20	C256_(2) No	0.0013	0.0006
21	C113_(4) Never	0.0013	0.0005
22	L293_(11) 10 - Extremely favorab	0.001	0.0007
23	C247_(3) A little	0.001	0.0006
24	C248_(3) A little	0.001	0.001
25	DP2010_PERCENT18OLDERFEMAL	0.001	0.0003
26	C130_(2) No	0.001	0.0008
27	SC2011_PERCENTEDUCAA	0.0009	0.0004
28	C246_(3) A little	0.0009	0.0005
29	L219_(4) Somewhat agree	0.0009	0.0007
30	L293_(09) 8	0.0008	0.0005

## **Appendix: Variables & Methods**

### **Partisan Variables Removed (46 columns total)**

Variable	Description
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C25	Party registration
C26	Strong partisan identification
C31	Ideology (liberal-conservative scale)
L46	Which party better on immigration
L266	Which party better for Latinos
L267	Which party better on values
C2	Hillary Clinton favorability
C3	Bernie Sanders favorability
C4	Donald Trump favorability
C5	Ted Cruz favorability
C8	Bill Clinton favorability
C9	Barack Obama favorability
C242_HID	Party identification (derived)

### **Interpretation Notes**

Permutation Importance: Measures feature importance by shuffling each feature and measuring AUC decrease.  
(50 repeats for stability)

SHAP Values: Measures average contribution of each feature to individual predictions.  
(Computed on 500 test observations)