



# Veil of Darkness (VOD): An Expansion on the VOD Hypothesis in the Context of Racial Profiling

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## INTRODUCTION

- VOD is described as a hypothesis that declares that police are less likely to identify the race of a driver prior to stopping them after dark, as opposed to during daylight (Grogger & Ridgeway, 2006).
- Kalinowski, Ross, and Ross noted in their research that when race is not observed, minorities are less likely to be stopped (Kalinowski et al., 2017).
- By using VOD, researchers create a natural experiment based on the availability of sunlight to determine if that influences who officers stop, based on the race of the driver. This allows an opportunity to determine if racial bias is present. (Chanin et al., 2016) .
- Investigatory stops are a police tactic so that officers can stop a driver for a minor violation with the intent of seeing if the driver is involved in more significant criminal activity beyond a traffic violation (Baumgartner et al., 2018; Epp et al., 2014)
- Racial profiling is a discretionary decision made by an officer to use their official police power to stop a citizen based on their race (Higgins et al., 2012)

## Research Questions

1. What is the relationship between the veil of darkness and investigatory traffic stops based on the race of the driver?
2. Does the physical makeup of the vehicle (including make and car color) impact police officer decision making for investigatory traffic stops based on the race of the driver?
3. What is the relationship between the veil of darkness and investigatory traffic stops for male drivers based on their race?
4. Does the car make or car color impact police officer decision making for investigatory traffic stops for male drivers based on their race?

## METHODS

- Data: Chicago Police Department Investigatory Traffic Stops occurring between January 1, 2016 and February 28, 2017
- Analysis: Logistic regression
- Dependent Variable: Driver Race (0 = Caucasian, 1 = African-American)
- Independent Variables:
  - VOD: Using the U.S. Naval Observatory civil dusk intertwilight is 4:51 PM CT to 8:04 PM CT (0 = Occurred in darkness, 1 = Occurred in daylight)
  - Car Color: White, Red, Gray and Silver (reference category all other colors)
  - Car Model: Chevrolet, Ford, Dodge Nissan, Pontiac, Buick, Toyota (reference category all other car models)
  - Vehicle Year (continuous measure)
  - Time Interval (collapsed into 15-minute intervals)
  - Weekend Stop (reference category weekday)
  - Male Driver (0 = female, 1 = male)
  - Age of the Driver (continuous measure)

## Results (except for VOD only significant variables were included in the table to conserve space)

Model One				
Measure	b	S.E.	Exp(b)	Tol
Veil of Darkness	-0.11	0.13	0.90	0.76
Male Driver	0.54***	0.14	1.72	0.99
Age of the Driver	-0.02***	0.01	0.98	0.97
Ford	-0.59***	0.17	0.55	0.87
Dodge	0.63*	0.27	1.88	0.87
Pontiac	1.56***	0.39	4.74	0.86
Buick	1.37***	0.40	3.94	0.86
Toyota	-0.99***	0.21	0.37	0.93

n = 4,815  
 Model Diagnostics:  
 2 log-likelihood = -1146.18  
 Chi-Square = 144.74\*\*\*  
 Pseudo R-Squared = 0.06  
 \*p<0.05, \*\*p<0.01, \*\*\*p<0.001

Model Two: Male Drivers				
Measure	b	S.E.	Exp(b)	Tol
Veil of Darkness	-0.12	0.15	0.89	0.76
Age of the Driver	-0.03***	0.01	0.98	0.96
Ford	-0.57**	0.20	0.57	0.87
Dodge	0.86**	0.32	2.35	0.87
Pontiac	2.56***	0.72	12.93	0.86
Buick	2.01**	0.59	7.46	0.86
Toyota	-0.84**	0.25	0.43	0.94

n = 4,035  
 Model Diagnostics:  
 2 log-likelihood = -883.14  
 Chi-Square = 124.82\*\*\*  
 Pseudo R-Squared = 0.07  
 \*p<0.05, \*\*p<0.01, \*\*\*p<0.001

## CONCLUSIONS

- In both models there is no support for VOD (RQ#1 & RQ#3) as an explanation for racial bias for investigatory stops based on the stops occurring in daylight for African American drivers or African American male drivers
- No support was found for the car color impacting police decision-making but there were certain car models that either increased or decreased the odds of an African American driver or African American male driver being stopped (RQ#2 &RQ#4)
- This is the first study to apply VOD hypothesis to investigatory stops while also considering characteristics of the car that could impact police decision-making as well
- The overall results do show evidence of racial profiling for investigatory stops but not within the context of VOD hypothesis

## REFERENCES

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## Descriptive Statistics

