Investigating Factors that Affect Perceived Threat Level of Individuals Involved in Police Shootings

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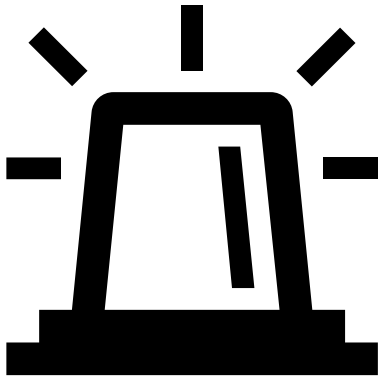
Research Question :

How does region, race and age impact the perceived threat level of an individual in a police shooting?



Background & Motivation

A report by The Washington Post found that Black Americans are disproportionately impacted by police use of lethal force. Despite making up only **13% of the US population, Black Americans accounted for 24% of all people killed** by police in 2020 (1)

A study by the Ruderman Family Foundation found that in some cities, such as Los Angeles, people with **mental illness accounted for nearly 40% of all police shootings (2)**

★ target and address ways to minimize the number of dangerous and fatal police shootings due to biases.

DATA

Gathered by **the Washington post** in a compilation database of every fatal shooting in the United States by a police officer in the line of duty since Jan. 1, 2015.

CORGIS Dataset Project

collected by Dennis Kafura, Joung Min Choi, and Bo Guan.

https://think.cs.vt.edu/corgis/csv/police_shootings/

https://www.washingtonpost.com/national/how-the-washington-post-is-examining-police-shootings-in-the-united-states/2016/07/07/d9c52238-43ad-11e6-8856-f26de2537a9d_story.html

Key Descriptions

Key	List of...	Comment	Example Value
Person.Name	String	Full name of the individual or "Unknown" if not reported	"Tim Elliot"
Person.Age	Integer	Age in years of the individual or 0 (zero) if not reported	53
Person.Gender	String	One of Male, Female, or Unknown	"Male"
Person.Race	String	One of Asian, African American, White, Hispanic, Native American, Other, or Unknown.	"Asian"
Incident.Date.Month	Integer	Month (1-12) in which the shooting occurred	1
Incident.Date.Day	Integer	Day (1-31) in which the shooting occurred	2
Incident.Date.Year	Integer	Year (2015-2019) in which the shooting occurred	2015

Variables:

6569 observations

Race, region, Perceived Threat Level → Qualitative

Age → Quantitative

Explanatory Variables: race, region, age

Response Variable: perceived threat level

Methodology

1. **Visualizations**

   Showing relationship between explanatory and response variable

2. **Linear Regression Model**

   Explanatory Variable: region, race, and age
   Response Variable: threat level

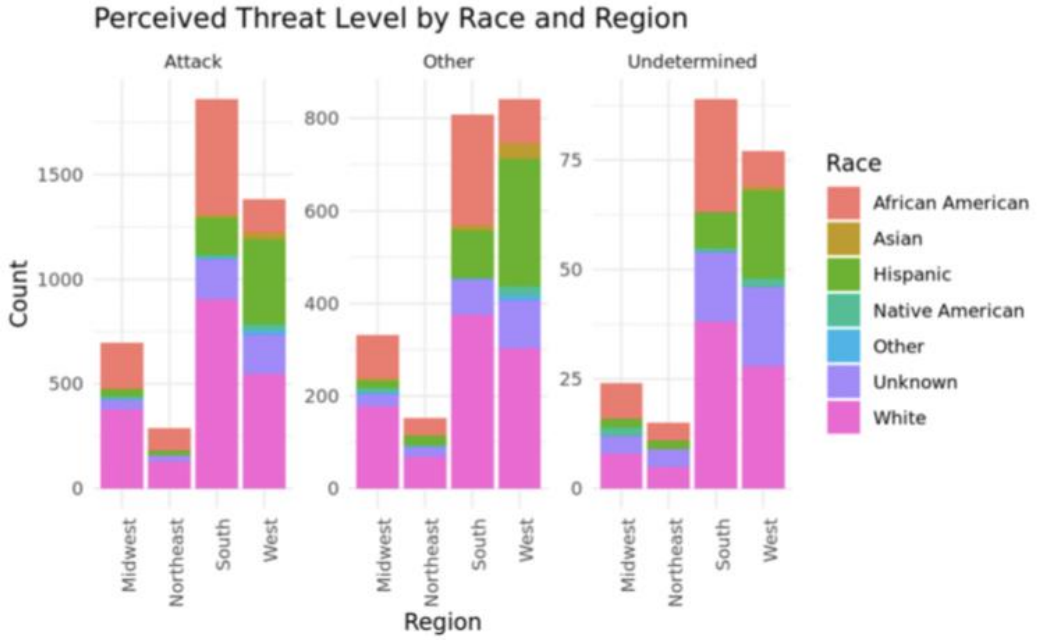
3. **Summary Statistics**

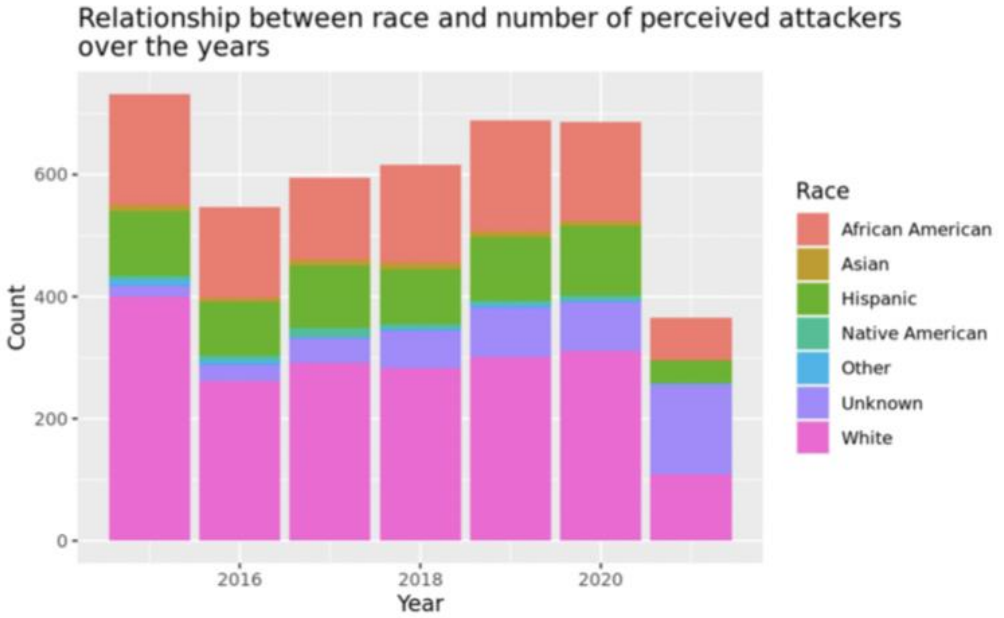
   Contexualizing findings with mean values for explanatory and response variables

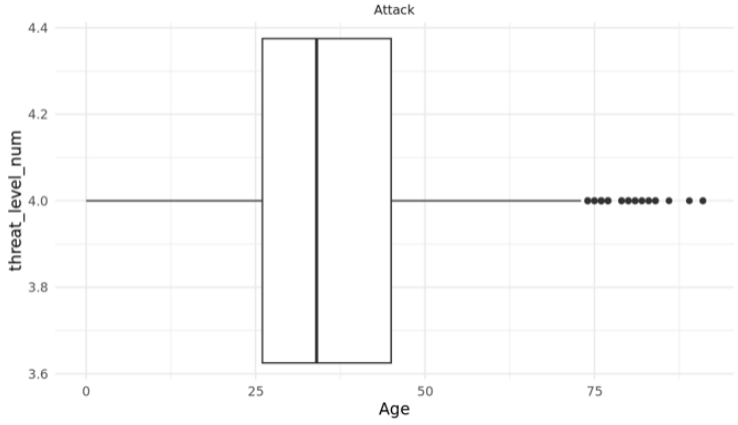
4. **Predict function**

   Modeling individual explanatory variable's effect on response variable

VISUALIZATIONS







Linear Regression Model

Predicted Linear Regression Values

term <chr>	estimate <dbl>	std.error <dbl>	statistic <dbl>	p.value <dbl>
(Intercept)	3.623166714	0.0374061222	96.860260	0.000000000
race_num	-0.026575875	0.0081641381	-3.255197	0.001142048
Person.Age	0.001992737	0.0006137483	3.246830	0.001176068
region_num	-0.014470555	0.0082674403	-1.750307	0.080137833

Predicted Linear Regression Equation

$$\widehat{threat\_level\_num} = 1.377 + 0.0266 * race\_num - 0.0019927 * Person.\ Age + 0.01447 * region\_num$$

threat_level_num: {1 if unnkown; 2 if undetermined; 3 if other; 4 if attack}

region_num: {1 if Midwest; 2 if Northeast; 3 if South; 4 if West}

race_num: {1 if White; 2 if Black; 3 if Hispanic; 4 if Asian; 5 if Native American}

Summary Statistics & Predictions

Summary Statistics

- mean race: 1.670755
- mean age: 35.38469
- mean region: 2.960725
- mean threat level: 3.612726

Predictions for Region (all other variables held constant)

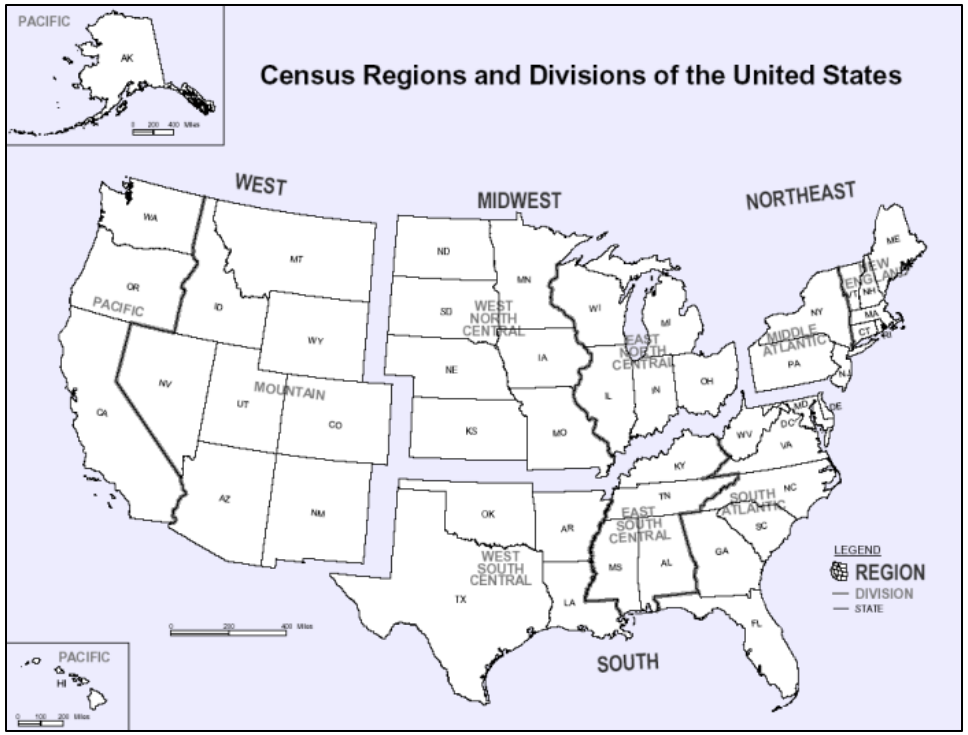
- Midwest = 3.634807
- Northeast = 3.620336
- South = 3.605866
- West 3.591395

Predictions for Race (all other variables held constant)

- White = 3.62426
- Black = 3.597684
- Hispanic = 3.571108
- Asian = 3.544532
- Native American = 3.517956

Predictions for Age (all other variables held constant)

- 25 years = 3.58574
- 35 years = 3.605667
- 45 years = 3.625595



LIMITATIONS

The data used in this analysis was gathered from media reports and may contain errors or inaccuracies.

LIMITATION 1

The dataset may not be completely representative of all police shootings in the United States, as not all incidents are reported by the media. Also the data set stops at 2021.

LIMITATION 2

The dataset does not provide information on the circumstances of the incident or the actions of the individuals involved.

LIMITATION 3

Team Abele

Future Work

01

Investigate other overarching factors

Further research should be conducted to investigate the factors that contribute to police shootings, such as police training, policies, and procedures.

02

Understand scope of the issue

It would be valuable to collect more comprehensive and accurate data on police shootings in order to better understand the scope of the issue and identify trends.

03

Review Implicit and Explicit Bias

Research could be conducted to explore the impact of implicit bias on police shootings and how this can be addressed through training and education.

THANK YOU ☺