Factors of the Fleeing Status of Victims Among Fatal Police Shootings in the US

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NAXA

Topic and Motivation

1000+
fatal police shootings in the US this year

9000+
fatal police shootings in the US since 2015

Research Question:

Among fatal shootings in the US over the last 8 years, is there a relationship between whether a victim tried to flee the scene and other factors related to the incident, such as the victim's age, gender, race, if they were armed, what they were doing before the incident and whether the incident was mental health related?

The Data
## Washington Post Fatal Force Database

- `age`: age of victim (numerical)
- `gender`: gender of victim (binary)
- `race`: race of victim (categorical)
- `region`: region of the US the shooting occurred in (categorical)
- `armed_with_grp`: if the victim was armed and, if so, with what (categorical)
- `was_mental_illness_related`: whether the victim had a history of mental illness or was experiencing a crisis at the time of the incident (binary)
- `threat_type`: actions the victim took leading up to the incident (categorical)
- `flee_status`: whether or not the victim tried to flee (binary)

Exploratory Data Analysis
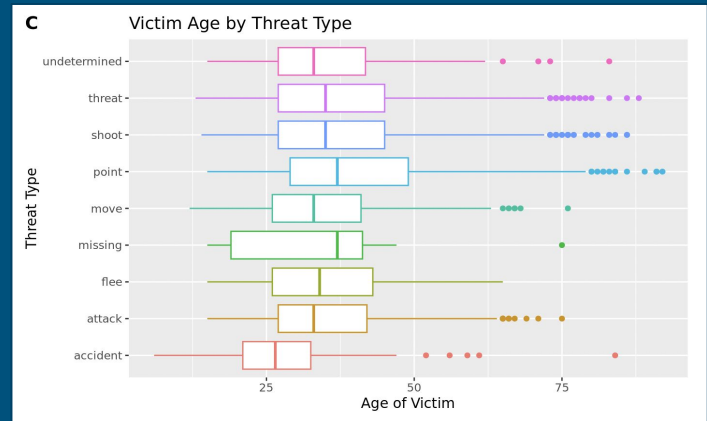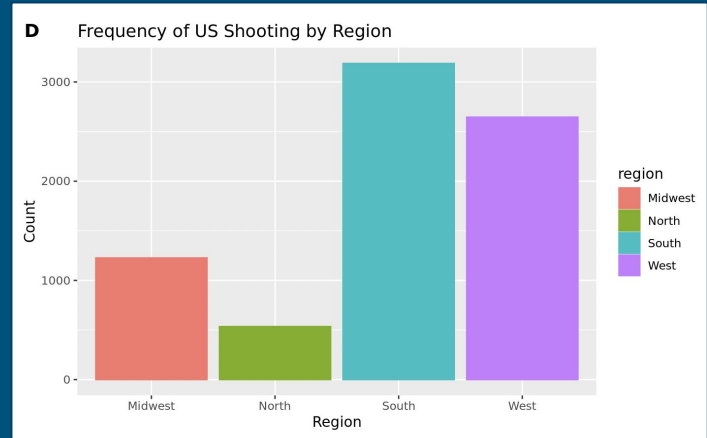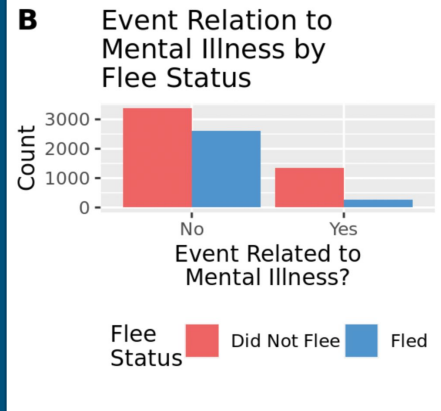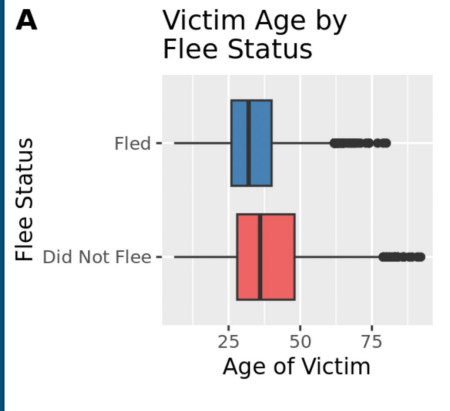
Model Selection: Statistics & Performance

- Considered 3 logistic regression models
  - Base 6 predictors
  - Base 6 + region
  - Base 6 + age*threat type

- In selecting a final model, we prioritized:
  - Lowest BIC (parsimony)
  - Highest accuracy (31% misclassification rate)
  - Relatively good AUC
  - Drop-in-deviance

AUC = 0.74
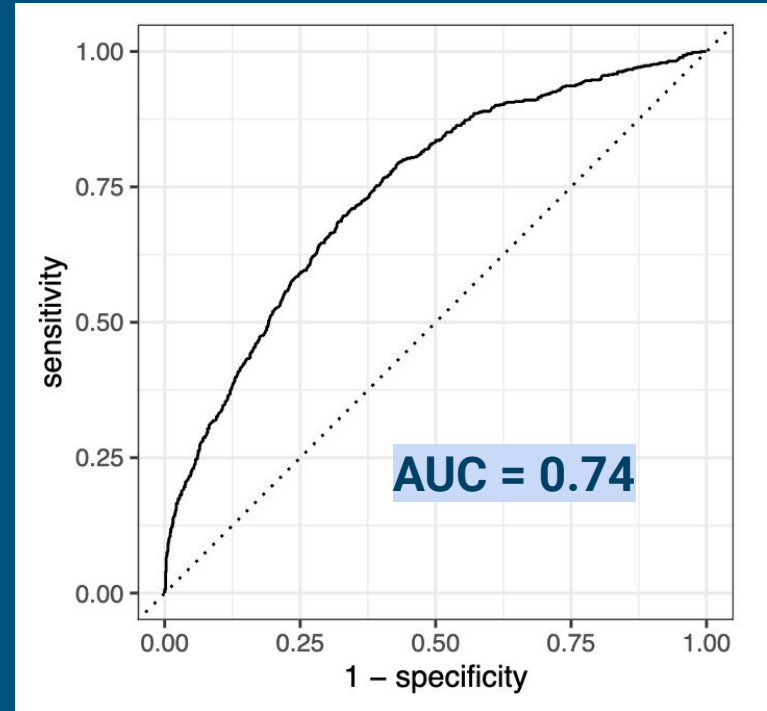
Final Model

★ Significant/all levels significant

★ Most levels significant

★ Most levels *not* significant

Age Gender

Race

Armed with

Mental illness

Threat type

term	estimate	std.error	statistic	p.value
(Intercept)	-2.320	0.473	-4.901	0.000
age	-0.032	0.003	-12.246	0.000
gender__male	0.438	0.169	2.587	0.010
gender__missing	1.565	0.740	2.116	0.034
race__Asian	-0.752	0.279	-2.695	0.007
race__Black	0.027	0.080	0.342	0.732
race__Hispanic	0.018	0.091	0.198	0.843
race__Missing	0.240	0.096	2.509	0.012
race__Native.American	0.413	0.266	1.552	0.121
race__Other	-0.044	0.587	-0.076	0.940
armed__with__grp__gun	1.246	0.261	4.778	0.000
armed__with__grp__knife	-0.011	0.264	-0.040	0.968
armed__with__grp__missing	2.630	0.315	8.339	0.000
armed__with__grp__multiple	2.281	0.352	6.473	0.000
armed__with__grp__other	0.237	0.421	0.564	0.573
armed__with__grp__replica	0.529	0.316	1.675	0.094
armed__with__grp__unarmed	1.182	0.281	4.202	0.000
armed__with__grp__undetermined	1.366	0.332	4.113	0.000
armed__with__grp__unknown	0.937	0.362	2.588	0.010
armed__with__grp__vehicle	2.918	0.307	9.492	0.000
was__mental__illness__related__Yes	-1.050	0.091	-11.546	0.000
threat_type_attack	0.413	0.401	1.032	0.302
threat_type_flee	5.703	1.079	5.286	0.000
threat_type_missing	13.897	232.954	0.060	0.952
threat_type_move	0.691	0.409	1.691	0.091
threat_type_point	0.165	0.408	0.405	0.686
threat_type_shoot	0.376	0.406	0.925	0.355
threat_type_threat	0.294	0.402	0.732	0.464
threat_type_undetermined	0.411	0.439	0.937	0.349

Conclusions & Future Work

Based on our model, we ultimately concluded the a person is expected to have…

Higher odds of attempting to flee if…

- They are younger
- They are male
- They were either armed with multiple items, a gun, or had a vehicle

* all compared to the baseline and holding all else constant

Lower odds of attempting to flee if…

- The incident was mental illness related
- They are Asian

Police encounters ending in fatalities are NOT the norm!

~1 in 45,000 end in fatality

Can our model be applied to ALL police encounters and will our conclusions differ?