Football Hooliganism: Analysing Football Related Arrests in England & Wales

While football hooliganism subsided in the early 1990's with harsher legislation and the widespread use of CCTV, it has been on the rise recently[1]. What is the constituent offences of most arrests, and how evolved over time? Are arrests higher for 'home' supporters? Is there a causal link between arrests and economic indicators?

The opportunity costs of committing crimes may be lower on match days as search costs for potential targets, people and property, are lower, and opposing supporters are in closer proximity[2]. We explore the breakdown and causes of arrests at matches using data from several leagues across 2019 to 2024. This research informs ways to address underlying factors.

Dataset

- The dataset comprises 177 football-related arrests made between 2019 and 2024 across the premier league, the champions league, the europa league, the europa conference league, the championship, league one, league two, the national league, the league cup and the FA cup.
- Arrests were committed in equal measure by home and away team supporters in the sample.
- The distribution is as follows; Premier League: 35% of total arrests, Championship: 28% of total arrests, League One: 20% of total arrests, League Two: 12% of total arrests, Other competitions (including cups and international matches): 5% of total arrests.
- The average number of arrests reported were 1.4 across the ten offence types. Arrests are highly skewed, with relatively few matches having more than the average number of arrests.

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[1] https://blogs.lse.ac.uk/europpblog/2024/02/14/why-is-football-violence-on-the-rise-again-in-europe/

[2] (Marie, 2010)

	Unique	Missing Pct.	Mean	SD	Min	Median	Max	Histogram
number_of_arrests	5	0	1.4	1.0	1.0	1.0	7.0	
home	2	0	0.5	0.5	0.0	0.0	1.0	
GVA_numeric	18	0	98.8	2.3	91.0	99.2	101.2	

The precision below of the line varies with each season due to disparities in the number of observations in each season. Reflecting the Covid-19 lockdown, there are few observations for the season 2020/2021, as indicated by the large standard errors in the figure below at this year.

## Arrests
Number of Arrests vs. Time
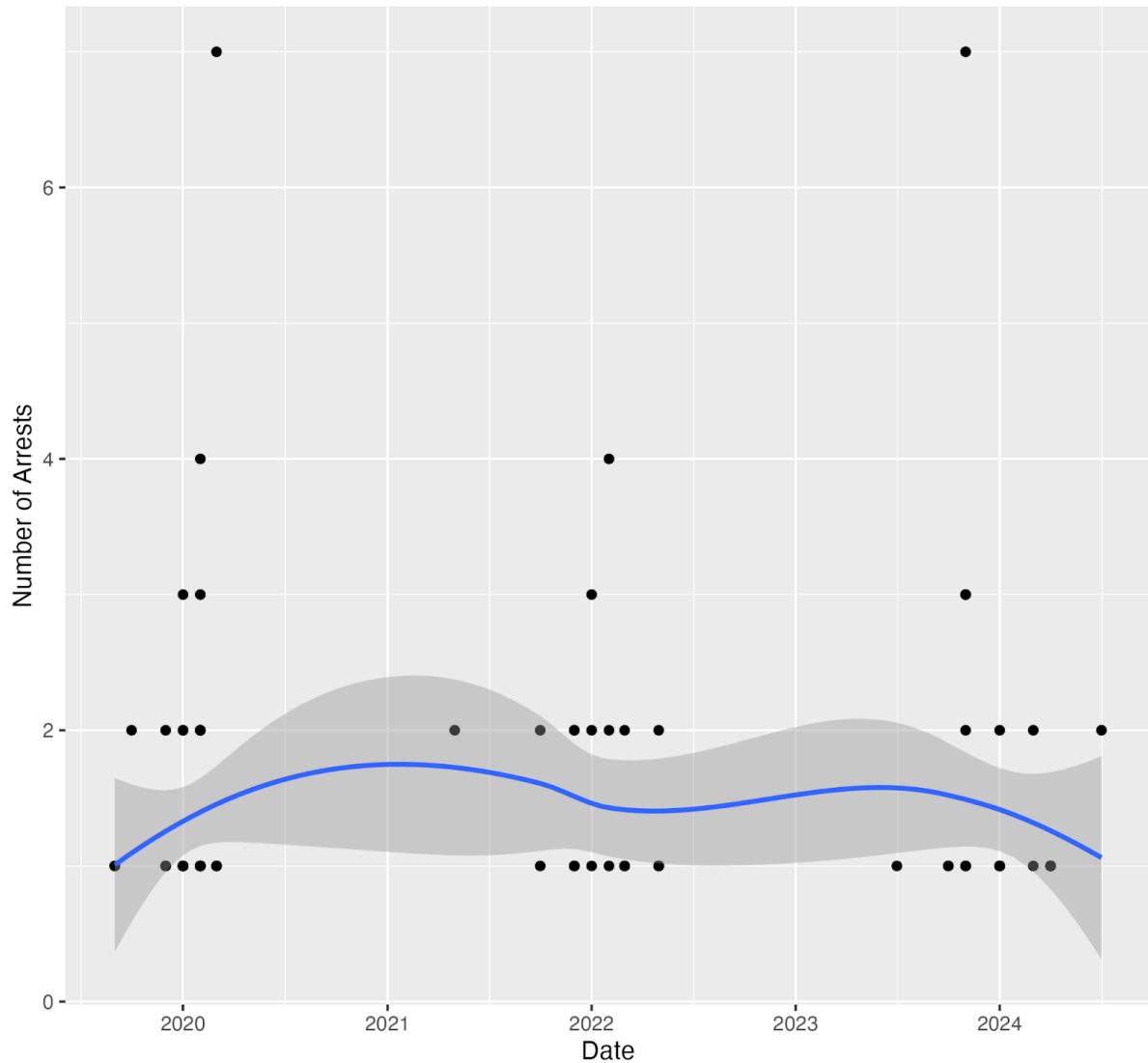
We identify five key relationships. First, arrests were equal among home and away supporters. Second, away supporters are more likely to be arrested for violence, and exhibit more offenses tied to group identity. Third, arrests are equal for home and away supporters. Fourth, there is no relationship between arrests and GVA[3]. Fourth, club performance is weakly, positively correlated with arrests.

Our analysis identified 5 key findings:

1. Public disorder and drug-related arrests are the most common arrest type

2019/20 had the highest arrests (81), indicating a pre-pandemic norm for crowd behaviour. Arrests dropped drastically in 2020/21 (2 arrests) due to COVID-19 restrictions, stadium closures, and limited attendance[4]. There were 40 arrests in 2021/22, and 54 in 2023/24, reflecting a resurgence of fans in stadiums.
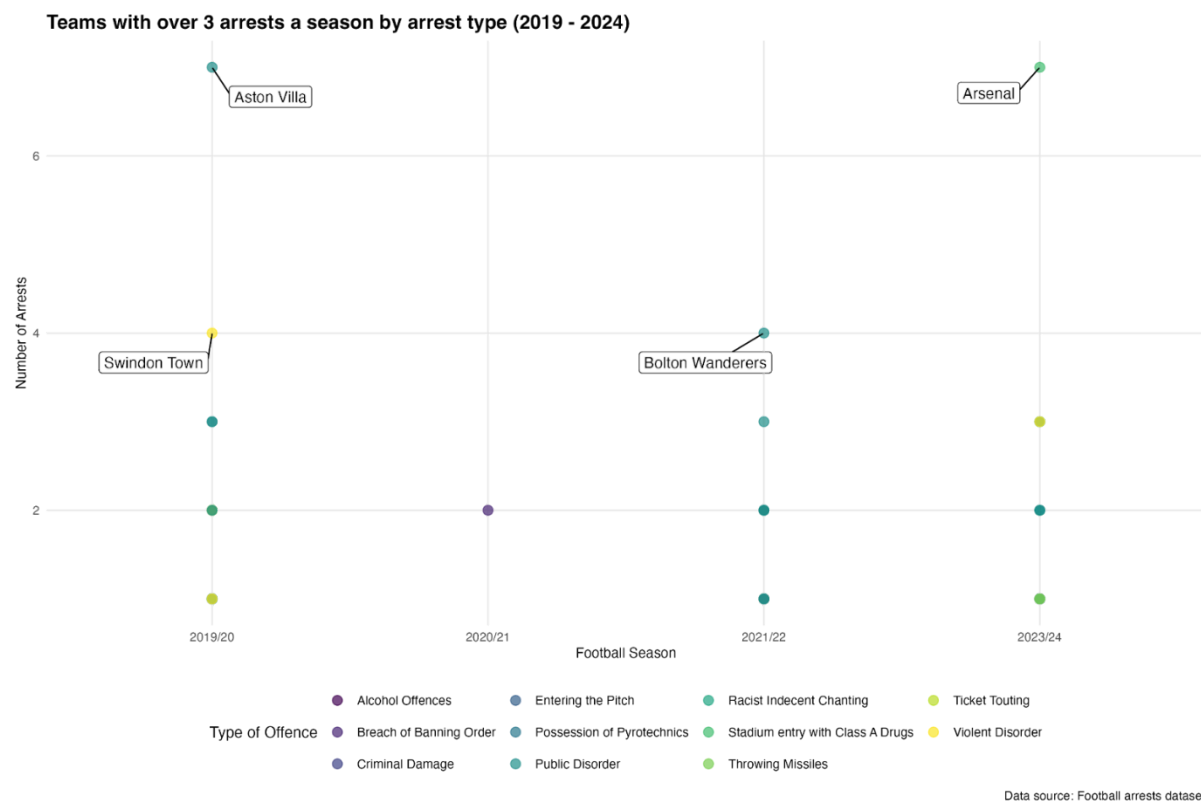

Football-Related Arrests by Season

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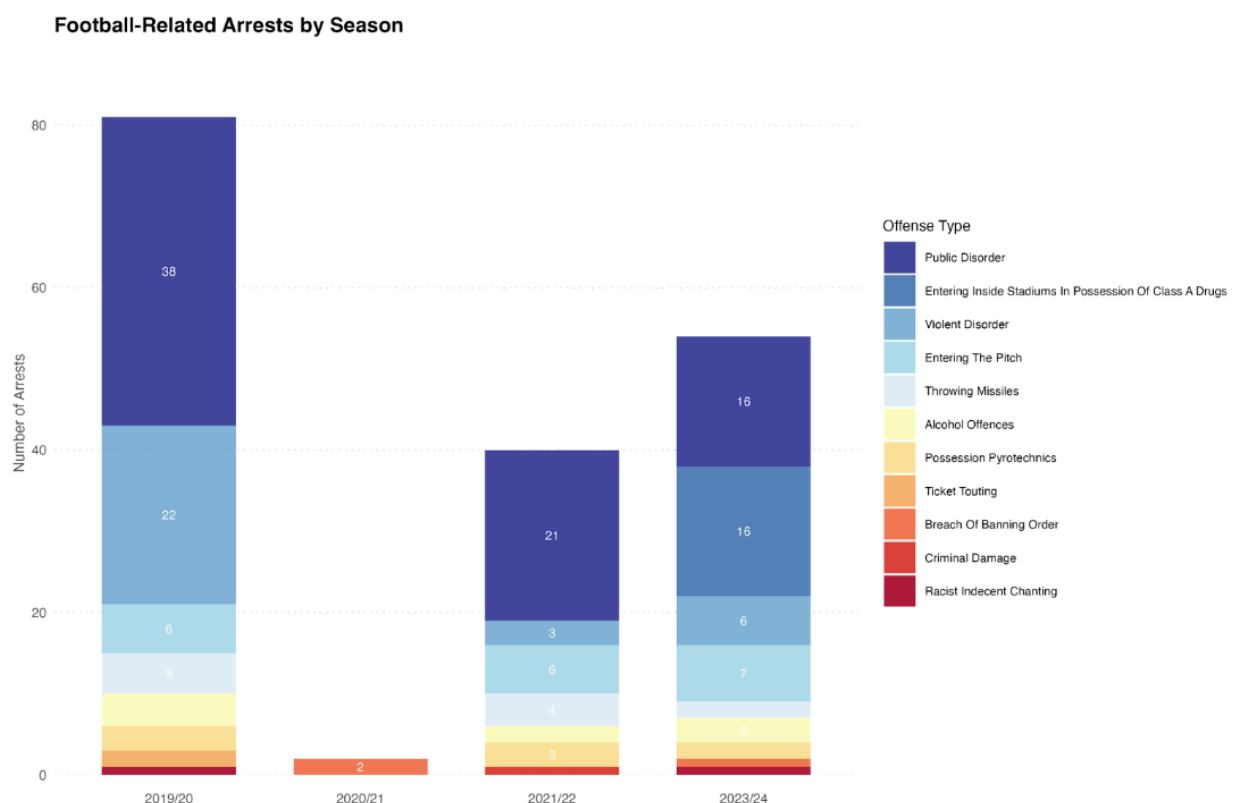
[3] Gross-Value Added (GVA) is the value that producers have added to the goods and services they have bought, and is one measure of economic output along with GDP.
[4] This is reflected by research on pandemic impacts on crowd gatherings (Police Professional).

Some offenses, such as drug-related arrests and public disorder, remained consistent contributors across seasons, possibly indicating persistent issues in fan culture.

2. Arsenal and Aston Villa supporters reported the highest number of arrests

Teams with over 3 arrests a season by arrest type (2019 - 2024)

Data source: Football arrests dataset

In the period from 2019 to 2024, the supporters of the teams with the highest arrest rates were the Bolton Wanderers, Arsenal, Swindon Town and Aston Villa with each having at least 4 arrests a season. Public disorder and stadium entry with Class A drugs are the most frequent arrest types consistent with our previous findings.

3. Away supporters are more likely to be arrested for football-violence and exhibit more offenses tied to group identity

Away supporters show slightly higher rates of arrests for public disorder, breach of banning orders and violent disorder, aligning with studies on crowd identity and territorial behaviour[5]. Home supporters tend to have higher incidents related to alcohol

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[5] (Stott, 2023).

offenses and pitch invasions, potentially linked to local fan dynamics and proximity to their home environment.

Football-Related Arrests: Home vs Away Supporters
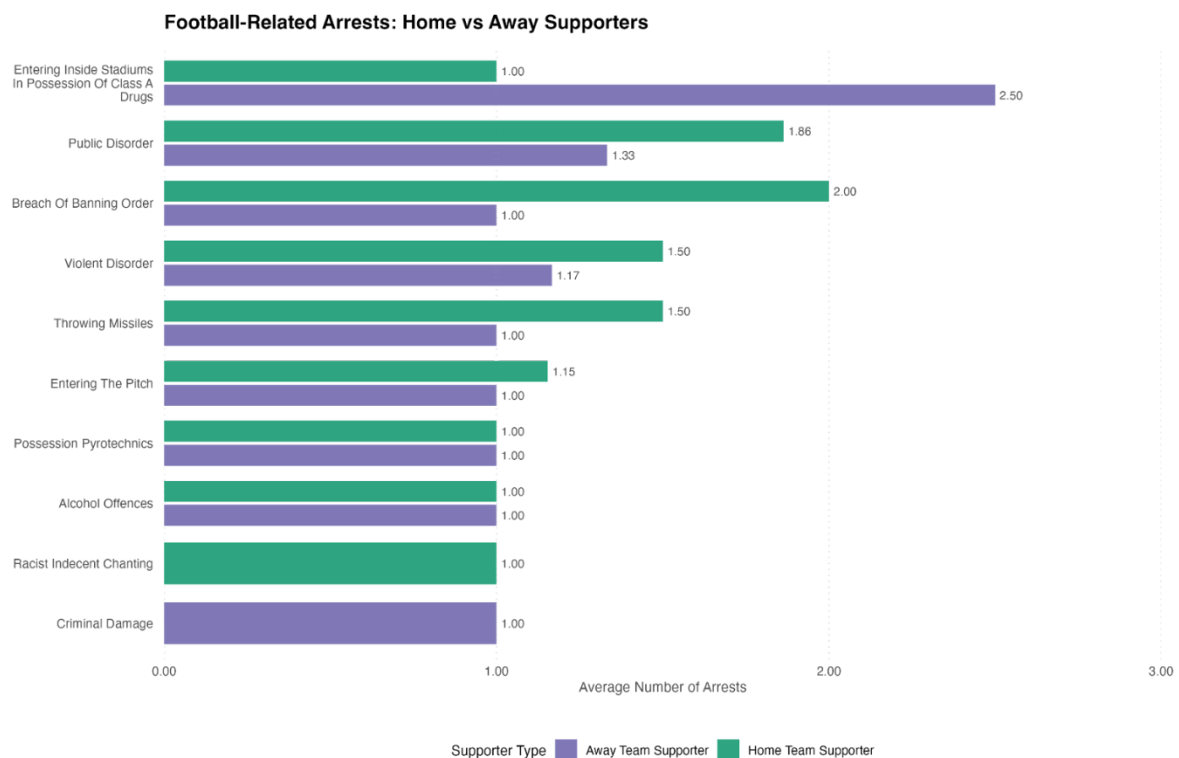
Drug-related and public disorder arrests were the most common, suggesting systemic issues that require targeted policing measures. Racist chanting and criminal damage are among the least frequent offenses.

Drug-related arrests have remained consistently high over the seasons, possibly due to increased scrutiny or a broader societal issue. Pitch invasions and violent disorder show spikes in recent seasons, perhaps tied to celebratory or rivalry-based behaviour post-pandemic as crowds return to full capacity[6].
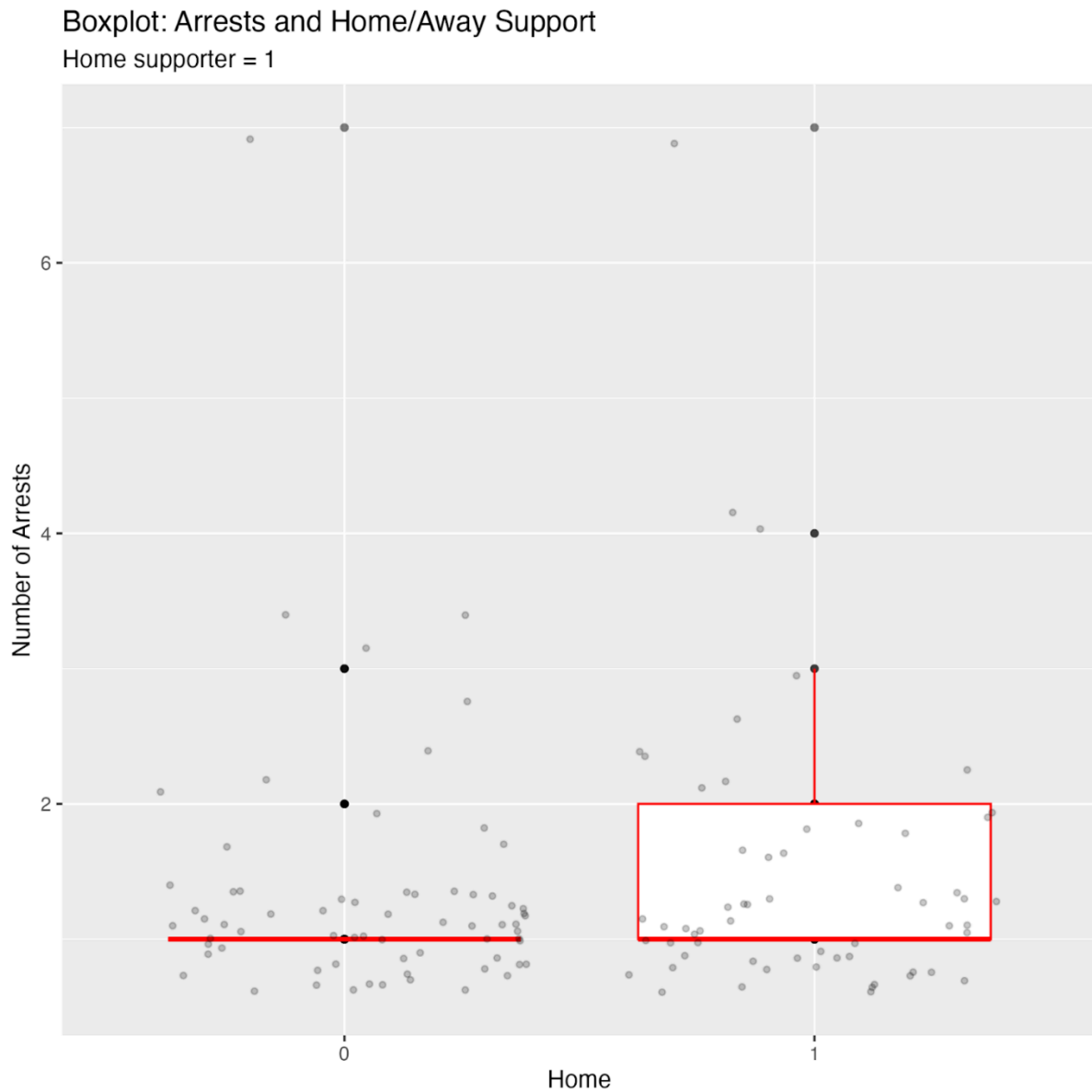
4. Arrests are equal for home and away supporters

Previous work suggests that home games may be associated with higher arrests, though home games and non-economically motivated crimes were positively, but not statistically significantly related[7].

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[6] (Sedeaud, De Larochelambert, Schipman & Toussaint, 2021)
[7] The authors also found that NFL home games did not have an effect on non economically motivated crime (Kalist, & Lee, pp.869-871)

The boxplot shows that median arrests are equal for home and away supporters, though the maximum number of arrests for home supporters is higher than that of away supporters. For away supporters, the lower and upper quartiles and median coincide. Observations for home supporters have more variance and larger outliers, the interquartile range being higher for home supporters.

Boxplot: Arrests and Home/Away Support
Home supporter = 1

The graph shows that the relationship between arrests for both levels of the home variable is flat. These suggest that arrests of home supporters were not different from those of away supporters.

Arrests are equal for Home and Away supporters
Arrests vs. Home/Away
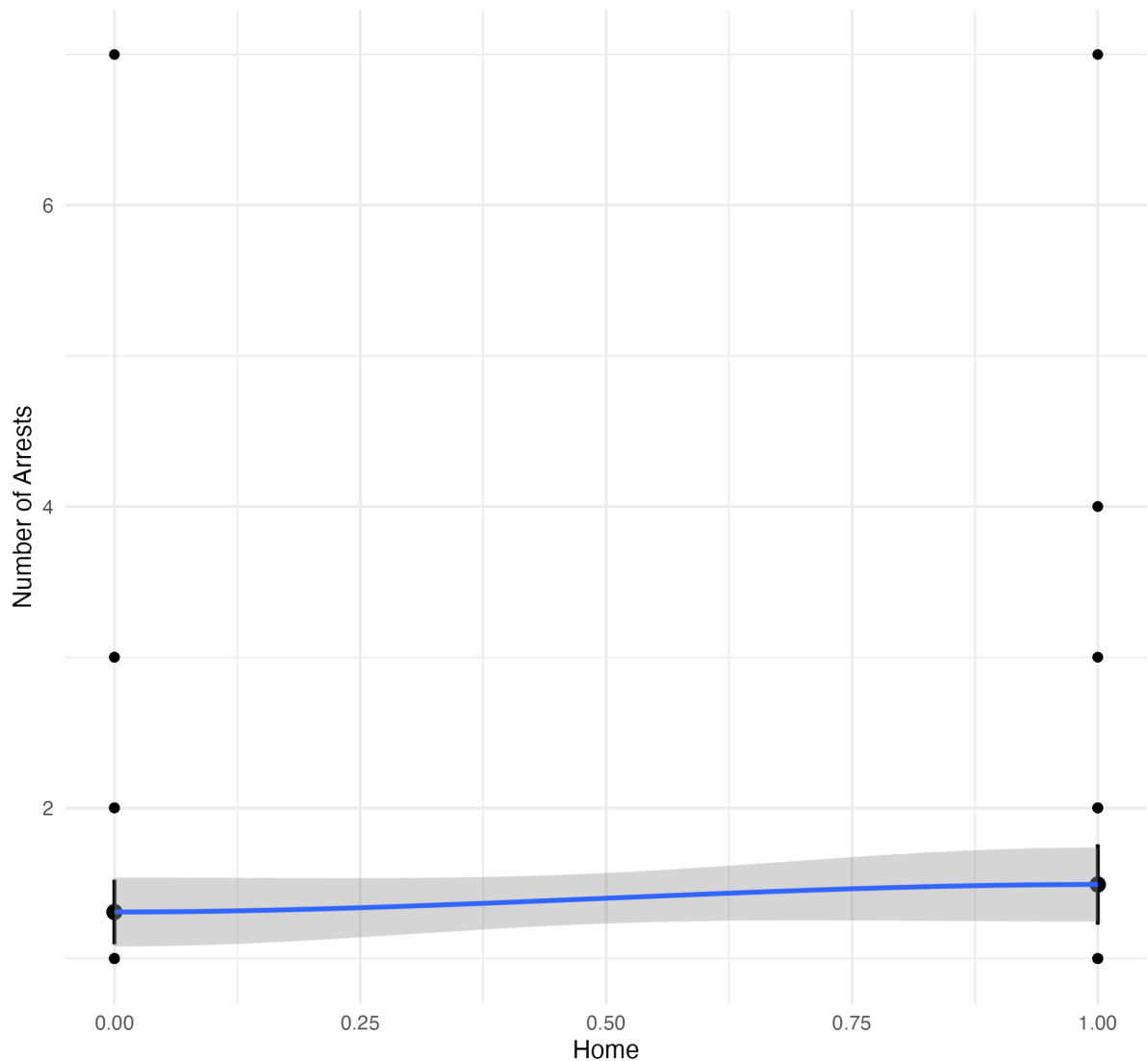
We regress *'arrests'* on *'home'*, a dummy variable equaling one if the team an offender was supporting was the home team[8]. This coefficient is not significantly different from zero, even before including controls. The correlation between *'home'* and *'arrests'* is low in both specifications.

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[8] Most professional football teams are named for, and marketed to, particular areas. When they play in those venues, they are considered the "home team", and the away team when they play elsewhere. The partial effect of 'home' represents the difference in arrests between the base category, away supporters, and home supporters.
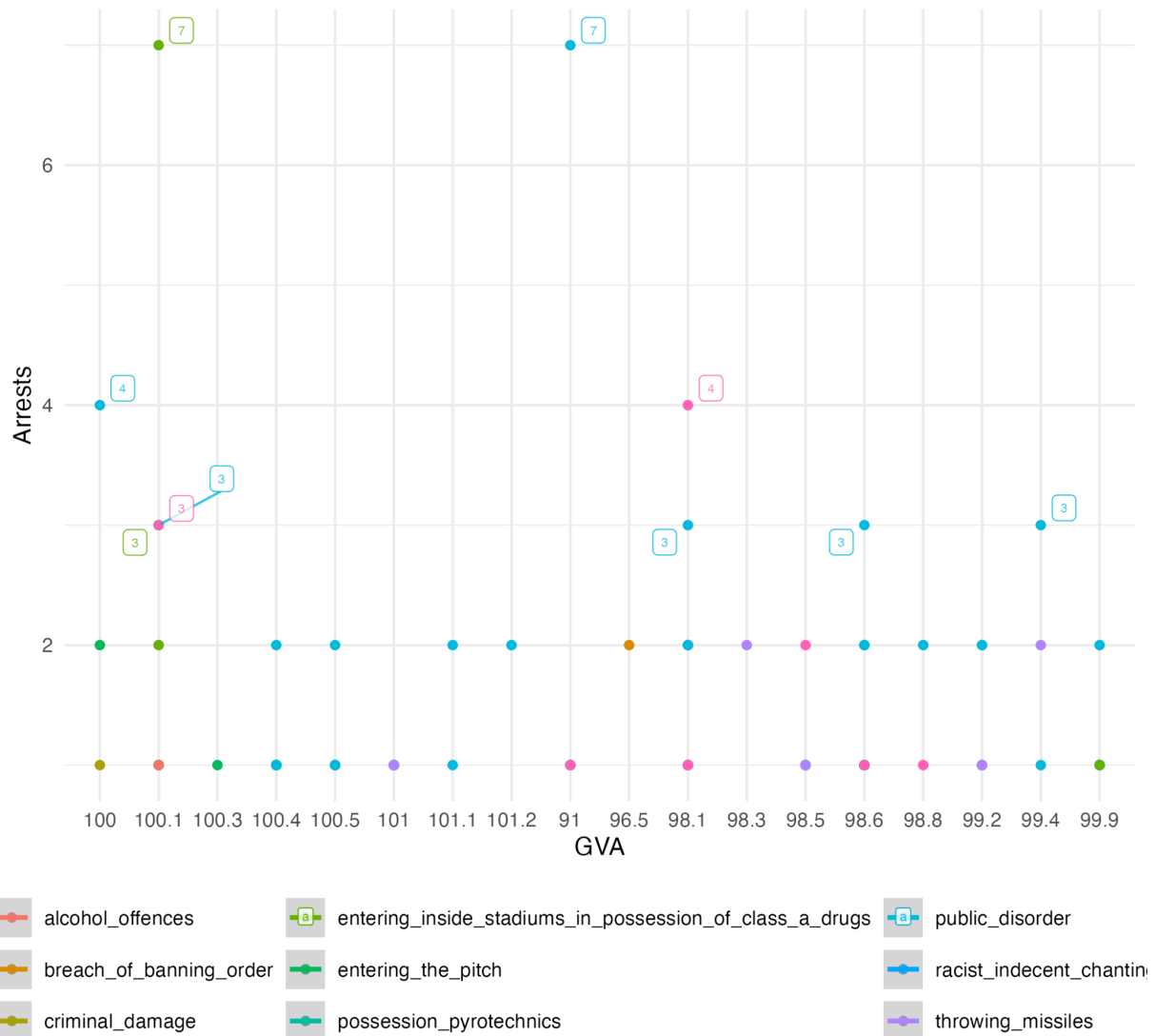
	(1)	(2)
(Intercept)	1.309	8.736
	(0.115)	(4.703)
home	0.183	0.188
	(0.169)	(0.176)
GVA_numeric		-0.077
		(0.048)
season2020/21		0.477
		(0.970)
season2021/22		0.212
		(0.249)
season2023/24		0.329
		(0.250)
Num.Obs.	127	127
R2	0.009	0.033
R2 Adj.	0.001	-0.007
AIC	351.9	356.8
BIC	360.4	376.7
Log.Lik.	-172.935	-171.378
F	1.164	0.831
RMSE	0.94	0.93

6. There is no relationship between arrests and GVA

We plot *arrests* against *GVA*, labelling matches where arrests were higher than average. Data points are coloured by offence type.

There is no relationship between arrests and GVA

Arrests vs. GVA

Legend:
- alcohol_offences
- entering_inside_stadiums_in_possession_of_class_a_drugs
- public_disorder
- breach_of_banning_order
- entering_the_pitch
- racist_indecent_chanting
- criminal_damage
- possession_pyrotechnics
- throwing_missiles

We regress arrests on GVA in two models. In the second column, we control for being a home supporter, as well as the season on which the arrest occurred. While there is a slight negative relationship between GVA and arrests, i.e. lower output is associated with higher arrests, this coefficient is not significantly different from zero. Also, given the low sample size, the fact that this is not significant, even at higher significance levels such as the 10% level, indicates this relationship is weak.

	(1)	(2)
(Intercept)	5.092	8.736
	(3.682)	(4.703)
GVA_numeric	−0.037	−0.077
	(0.037)	(0.048)
home		0.188
		(0.176)
season2020/21		0.477
		(0.970)
season2021/22		0.212
		(0.249)
season2023/24		0.329
		(0.250)
Num.Obs.	127	127
R2	0.008	0.033
R2 Adj.	0.000	−0.007
AIC	352.0	356.8
BIC	360.6	376.7
Log.Lik.	−173.012	−171.378
F	1.009	0.831
RMSE	0.94	0.93

7. Club performance is weakly, positively correlated with arrests

The correlation between the team ranking and arrests is 0.044. This relationship is weak, implying that other factors are likely driving the number of arrests, which may be skewing results. This differs from the majority of published literature.

Correlation between club performance and number of arrests
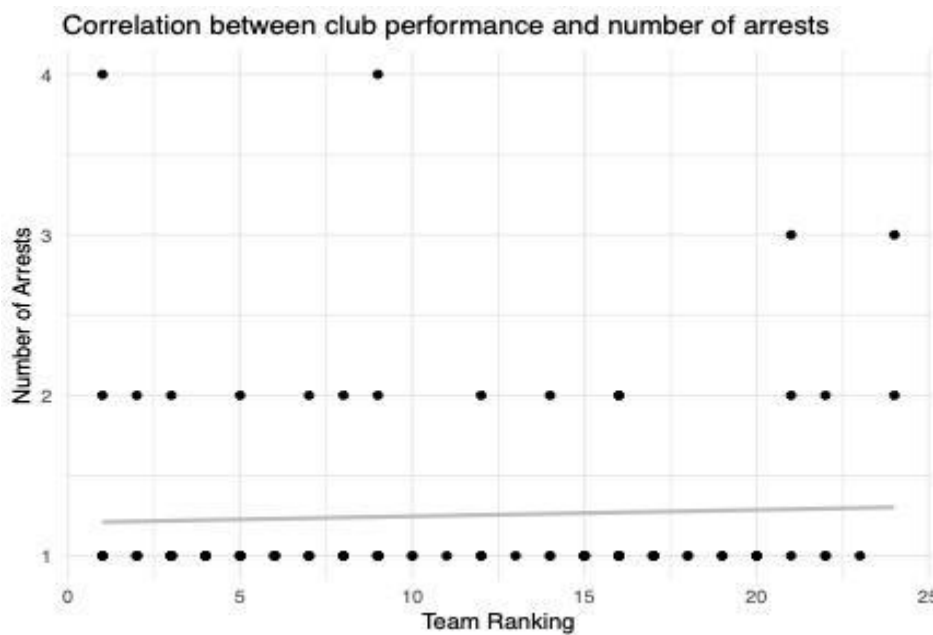
Limitations

- Covid-19

    - There are fewer observations from 2020 to 2021, and none between May 2020 to May 2021, coinciding with the Covid-19 lockdown resulting in matches played to empty stadiums. Standard errors are higher and estimates less precise as a result.

- Rankings
    - Limited amount of rankings available in relation to team performance in domestic and international competitions impacting the analysis of arrest trends. Just under a quarter of the data is empty due to team ranking not being available or the supporter who was arrested being a neutral supporter. This could cause skewness in our results.

- Data problems

    - The Offences Against the Persons Act, 1861, assault requires that both the victim and perpetrator of the assault can be identified, and also that the victim is willing to prefer charges against the assailant. This is rarely satisfied for football-related "assaults". Assailants are difficult to identify in crowded streets or terraces.[9]

Regarding future research, larger sample sizes can offset missing data problems as a result of the pandemic. Additional controls could also be introduced into each of the above regressions. In particular, each offence type could be regressed to describe the

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[9] (Williams, 1980, 106)

factors that contribute to the probability of each type of offence occurring, This may be of particular use in addressing underlying factors of, for instance, drug-related arrests of racist violence.

Data and code of this story available on Github.

Conclusion & key takeaways:

- Drug-related arrests and public disorder are prominent across seasons, necessitating preventative policies such as drug testing and stricter crowd management strategies.
- Away fans exhibit more offenses tied to group identity, violent disorder and breach of banning orders.
- Pitch invasions and certain violent offenses were more common after the pandemic, suggesting shifting fan behaviour.
- Arrests are not significantly different between home and away supporters.
- There is no significant relationship between GVA and arrests.
- Team ranking and arrests were weakly correlated, contrary to the common view in the literature.

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