Patterns and anomalies in drug-related arrests across South African police precincts

2005–2024

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What do arrest counts tell us about policing?

Recorded activity
is not the same as
drug prevalence or policy success

Drug arrests
track police activity
***and not* 'success' or impact**

National trajectory

When does recorded enforcement rise or fall?

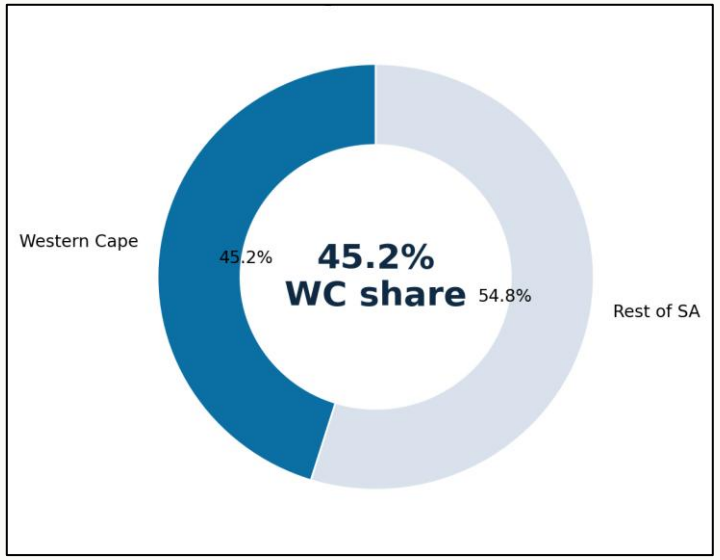
Local differentiation

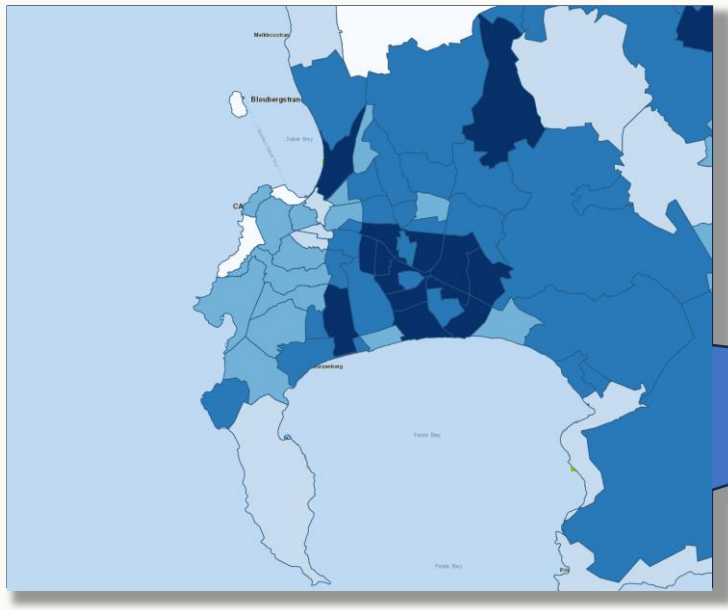
How do precinct trajectories differ?

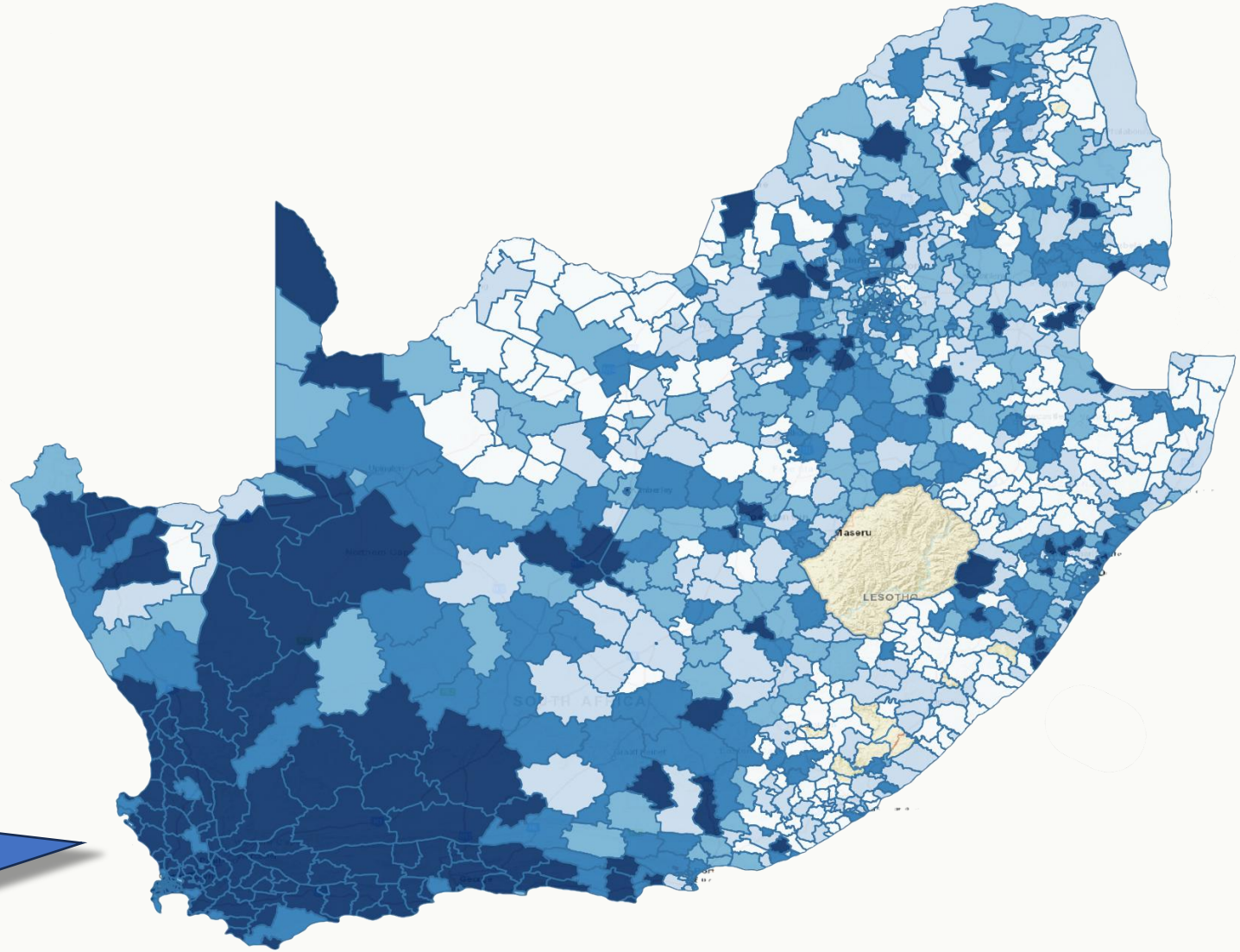
Exceptional cases

Where do abrupt breaks warrant investigation?

NATIONAL OVERVIEW







Precinct-level records make unevenness visible

1,143

police precincts

National precinct-level coverage

Annual drug-related arrest counts

South African Police Service (SAPS)
Study period: 2005/06–2023/24

Analytical focus

Tracing changes in enforcement over time and comparing the scale, direction and volatility of precinct-level trajectories.

Move from the national pattern to local cases

01

Aggregate

Sum annual precinct counts

National time series

02

Group trajectories

Standardise trajectories; K-means clustering, k = 4

Exploratory typology

03

Inspect anomalies

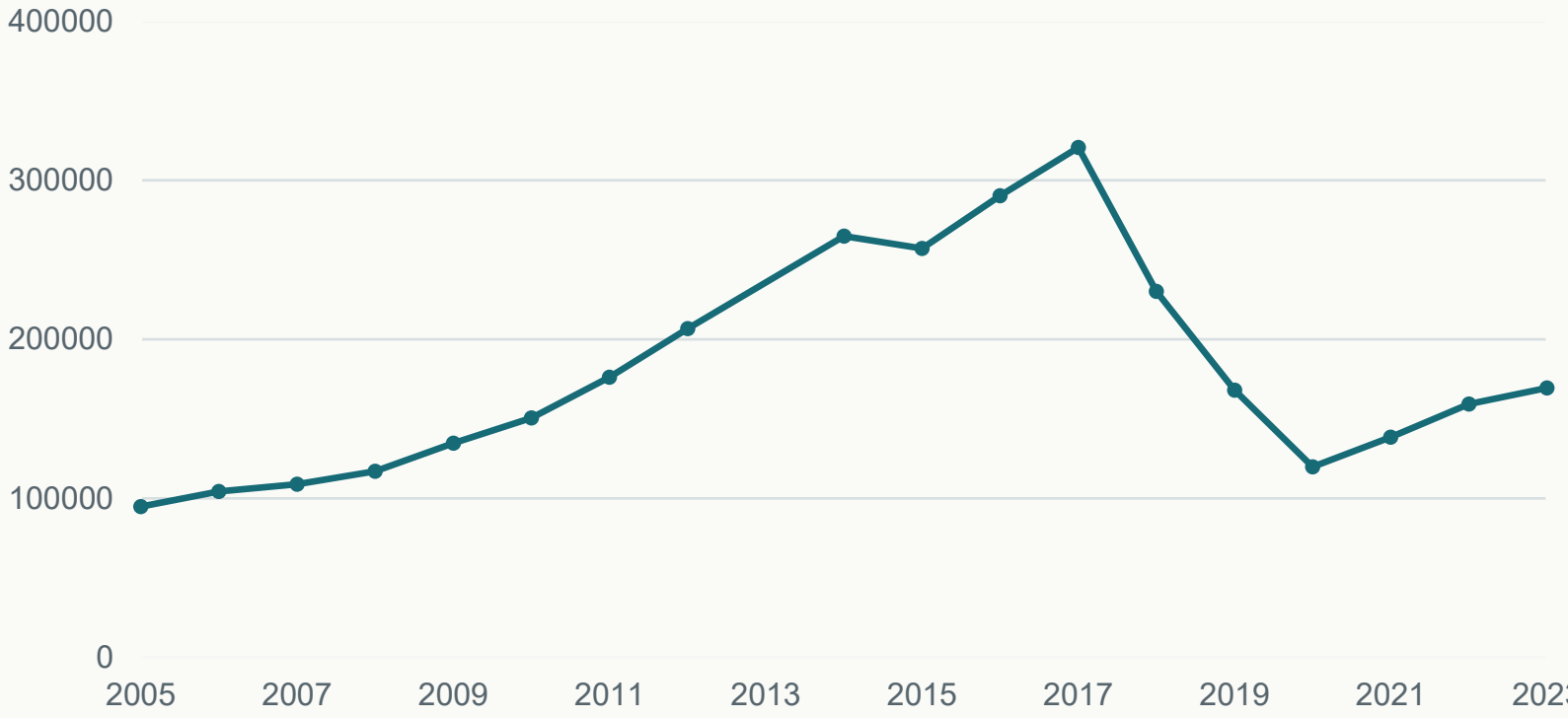
Compare growth, volatility and abrupt changes

Case selection for follow-up

A descriptive, longitudinal approach linking national trends, precinct trajectories and exceptional cases.

Expansion, contraction, then partial recovery

Recorded drug-related arrests



320,515

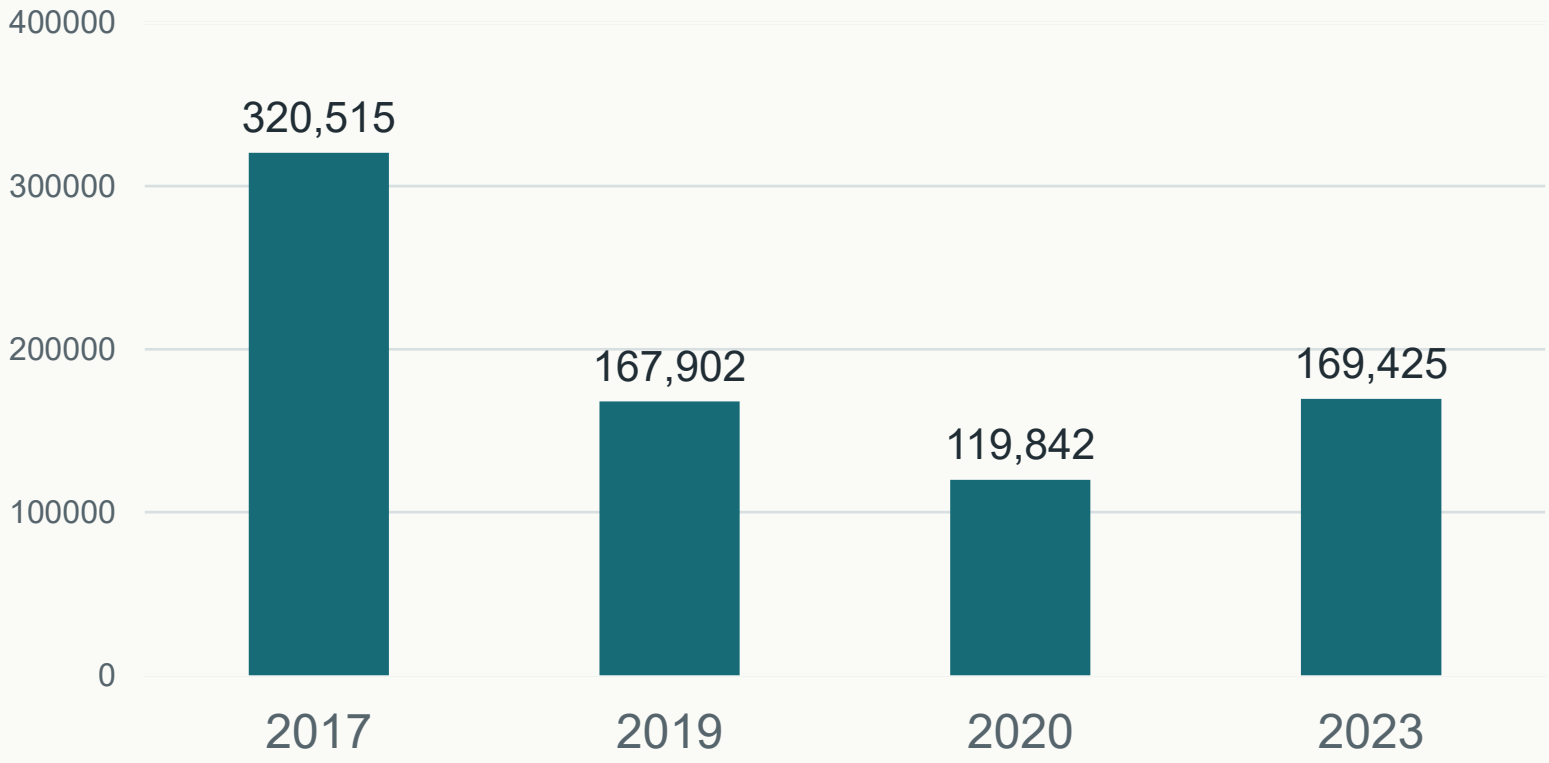
2017 peak

169,425

2023 total

Figure 1. National recorded drug-related arrests; lines connect observed annual totals.

Sharp contraction reshapes the national trajectory



−47.6%

2017 → 2019

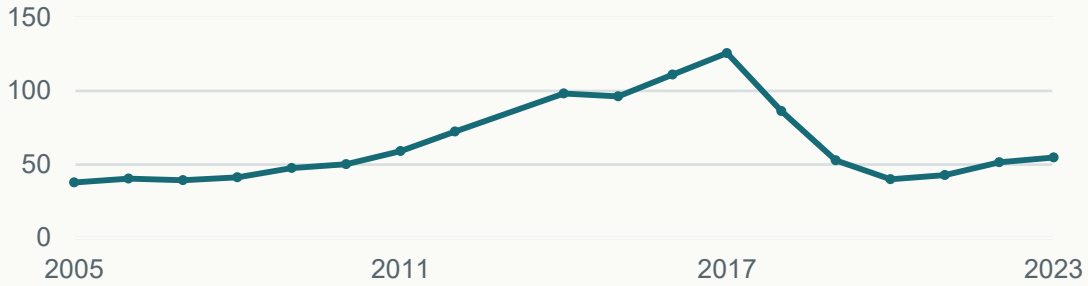
A substantial shift in the volume of recorded enforcement.

Selected observations from Figure 1 data. Percentage change = (167,902 ÷ 320,515 − 1) × 100.

Cluster averages differ in scale and trajectory

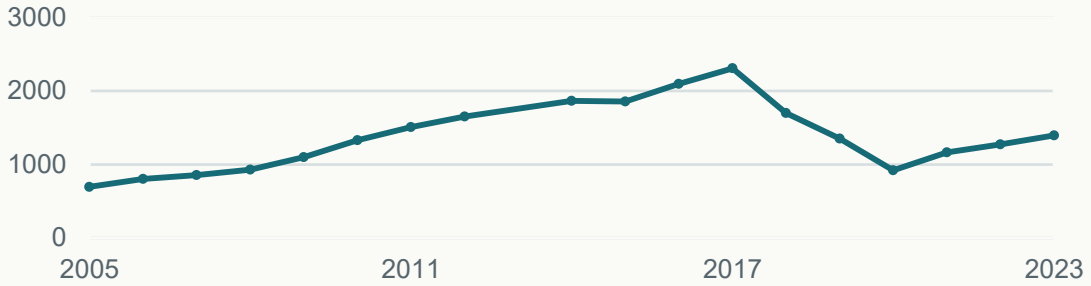
CLUSTER 0 – LOW VOLUME

55 in 2023



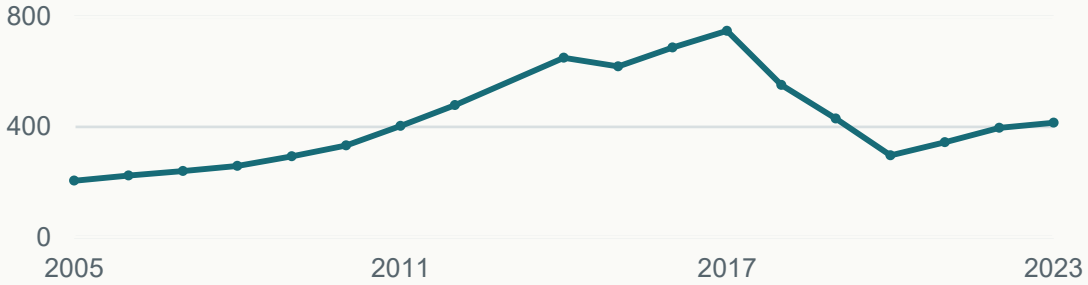
CLUSTER 1 – HIGH VOLUME

1,394 in 2023



CLUSTER 2 – INTERMEDIATE VOLUME

416 in 2023



CLUSTER 3 – VERY HIGH VOLUME

4,874 in 2023

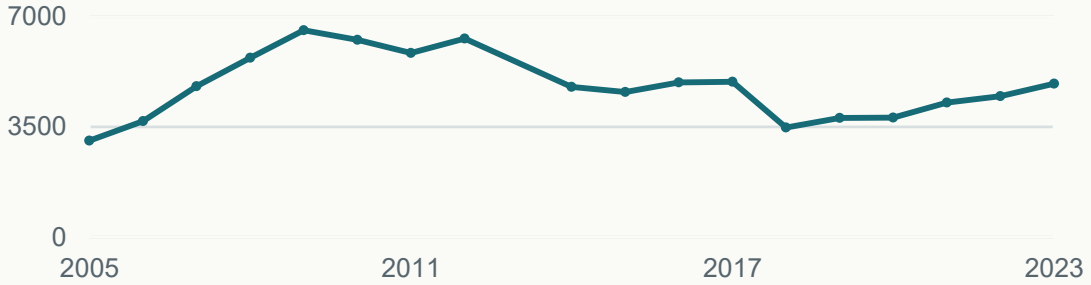
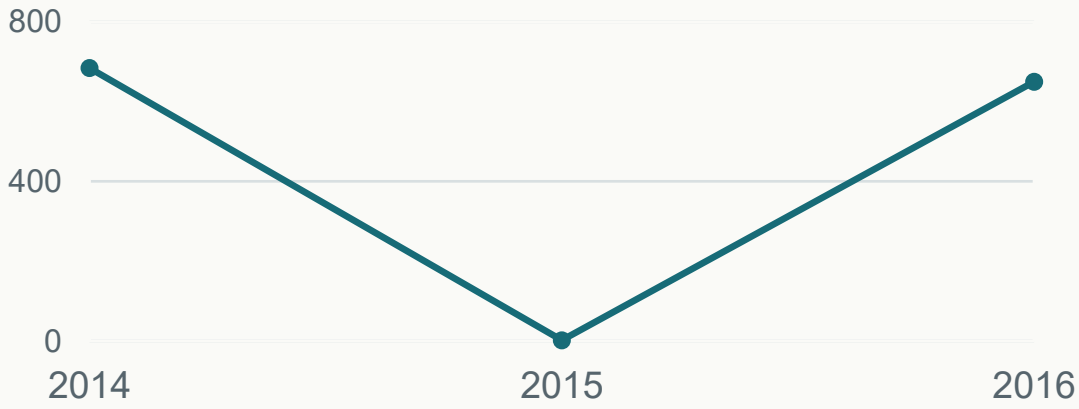


Figure 2. Mean recorded arrests by cluster. Independent y-axis scales make each trajectory visible.

Local breaks disappear inside national totals

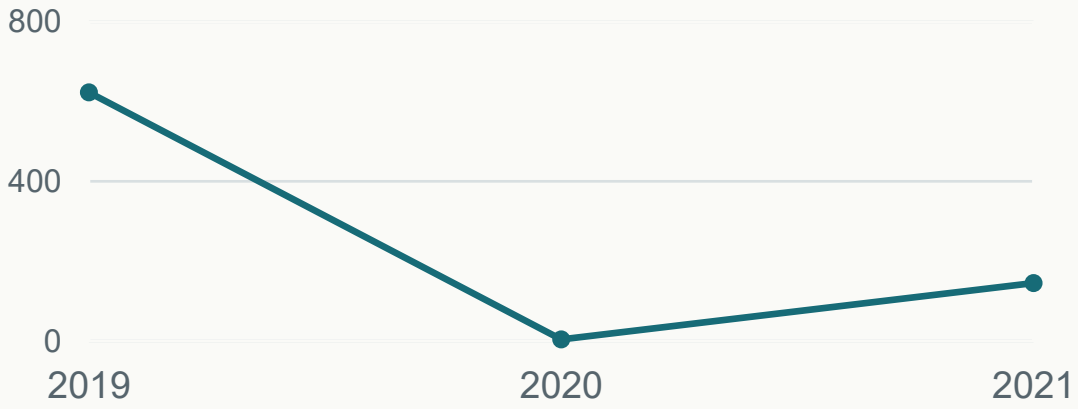
MOKOPANE

684 → 2 → 650



MOOINOOI

623 → 4 → 145



Local trajectories reveal the intensity of precinct-level change.

Table 2. Selected three-observation windows from the precinct-level arrest series.

Understanding the institutional context of unevenness

What the records show

A changing national trajectory

Different cluster mean profiles

Abrupt precinct-level breaks

Interpreting the pattern

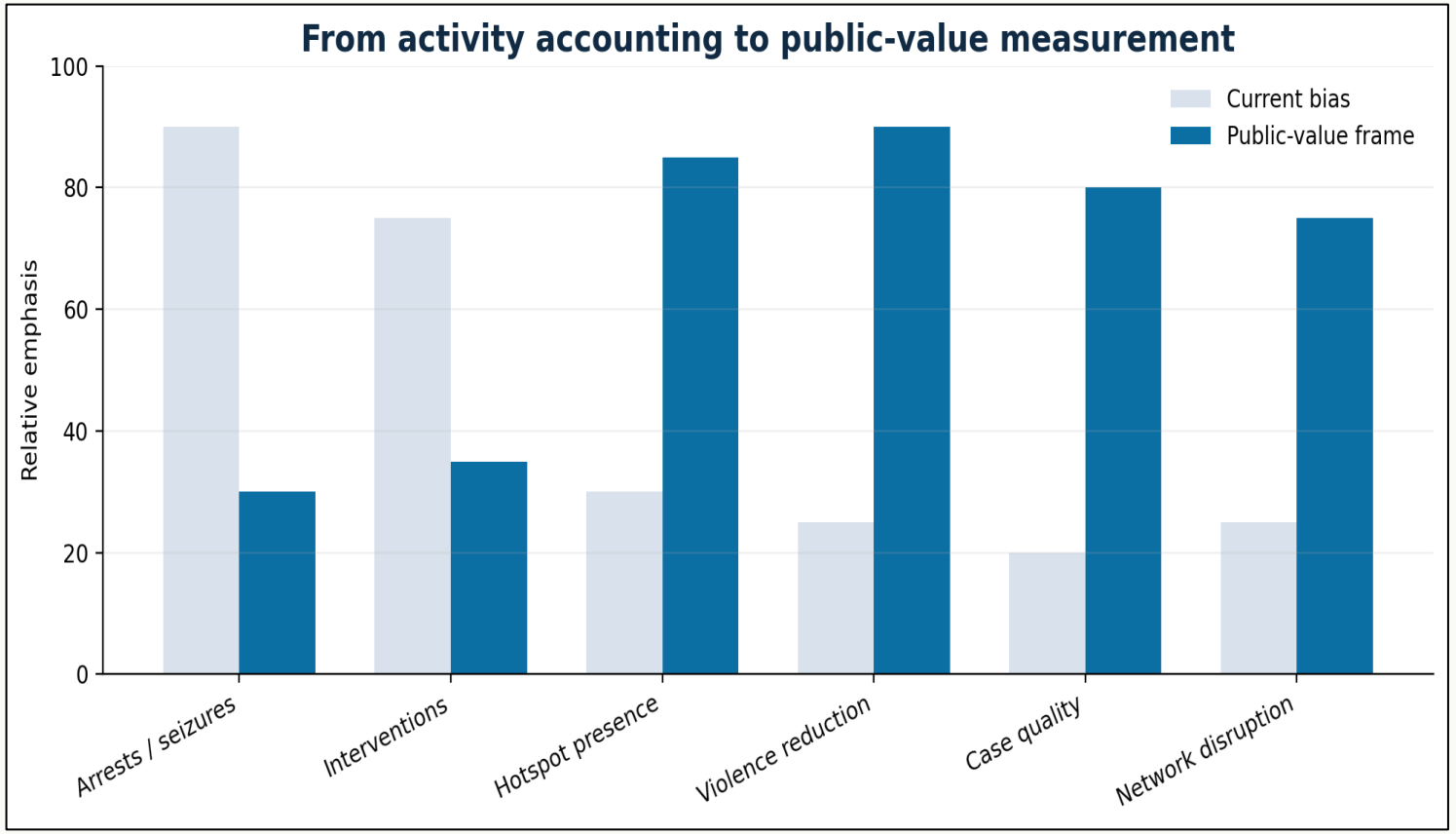
Performance incentives

Episodic enforcement operations

Local priorities and discretion

An institutional reading of enforcement: connecting observed patterns with local policing contexts.

Measuring success (and failure)



Success should be defined by what changed because the operation happened.

A precinct-level perspective on drug enforcement

National perspective

Places local enforcement within a long-term national trajectory.

Local differentiation

Shows how precinct profiles differ in scale and direction.

Temporal dynamics

Makes surges, contractions and recovery visible.

Empirical foundation

Identifies cases for institutional and qualitative research.

Towards accountable, outcome-focused drug policing

Evaluate outcomes	Pair enforcement activity with harm, safety and community-trust measures.
Review local practice	Connect precinct trajectories with operational histories and community experience.
Connect evidence	Bring policing, health and community indicators into evaluation.

Policy priorities: harm reduction, community safety, institutional accountability and equitable service.

Arrest activity is not evidence of effectiveness.

National totals	conceal important local differences.
Precinct trajectories	identify where closer investigation is needed.
Policy evaluation	must ask what changes in harm, safety and equity.

Thank you. Questions and discussion.

Selected cluster means

Cluster	Y2005	Y2017	Y2023
0	37.75	125.86	54.84
1	696.14	2,308.18	1,393.96
2	204.55	748.86	415.64
3	3,064.00	4,930.00	4,874.00

Mean recorded drug-related arrests per precinct within each cluster.

Selected observations from Figure 2; cluster means rounded to two decimal places.

Precincts with the highest outlier scores

Precinct	Cluster	Outlier score
MOKOPANE	2	1,552.64
MOOINOOI	0	20.28
GOWAN LEA	0	19.93
MSINGA	0	13.52
HARTBEESFONTEIN	0	8.75
MTONTSASA	0	7.26
ZAAIPLAAS	0	6.94
GRAVELOTTE	0	6.33
BATHO	0	5.94
SULENKAMA	0	5.72

Outlier score = standard deviation × mean of inter-observation percentage changes. A tool for selecting local cases.

Extending the precinct-level research agenda

Local institutions

Examine leadership, resources and operational priorities.

Spatial context

Connect enforcement trajectories with socioeconomic conditions.

Lived experience

Explore how communities and people who use drugs experience policing.

Policy outcomes

Link enforcement practices to harm reduction, safety and public trust.