



FIGHTING FOR JUSTICE & EQUALITY

South Africa deserves a professional police service committed to intelligence-led, evidence-based and responsive policing.

21 November 2018

Axolile Notywala
General Secretary, Social Justice Coalition

1. Dr Genine Josias' evidence before The Khayelitsha Commission of Inquiry
2. SAPS as environmental design activists?
3. Civilian Secretariat for Police's Analysis of Resource Allocation
 - Police aren't where gangs are
 - The known link between alcohol use and violence isn't acted on

Dr Genine Josias, the principal medical officer of the Khayelitsha Thuthuzela Forensic Centre related the discovery that a serial rapist was operating in the Endlovini neighbourhood. She noticed, during the course of 2010, four or five rape cases of little girls had taken place over a period of time. All of the little girls had been seriously assaulted and raped. All the cases were referred to Red Cross Hospital for specialised medical examination and repair under anaesthesia.

According to Dr Josias, –

“...the first were raped in a similar manner; they had been individually lured away into a bushy area in the Endlovini informal settlement. To me, even as someone who has never received training in police investigation, it was apparent that the *modus operandi in the perpetration of these rapes was similar*. They all presented similar facts. It seemed to me that we were dealing with the case of a serial rapist.”

Only after Dr Josias threatened to go to the media did SAPS set up a task team.

The Thuthuzela Centre worked closely with the task team, contacting them whenever a survivor of a sexual assault with a similar history presented at the Centre. It took eighteen months for the perpetrator to be arrested. By that time twenty rapes and one murder had taken place. The perpetrator was linked to all the cases by DNA evidence.

Dr Josias also testified that the serial rape incident indicated that there is a need for a range of role-players to participate in the fight against crime. So, for example, the rapes were taking place in the bushes around Endlovini. She suggested that there should have been more visible policing, and also surveillance cameras to monitor the area, and that the bushes should have been cleared by authorities when it became clear that it was a dangerous area.



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PICTURES OF INFORMAL SETTLEMENTS



Source:
SAPS Presentation at a Social Justice Coalition event
26 September 2016



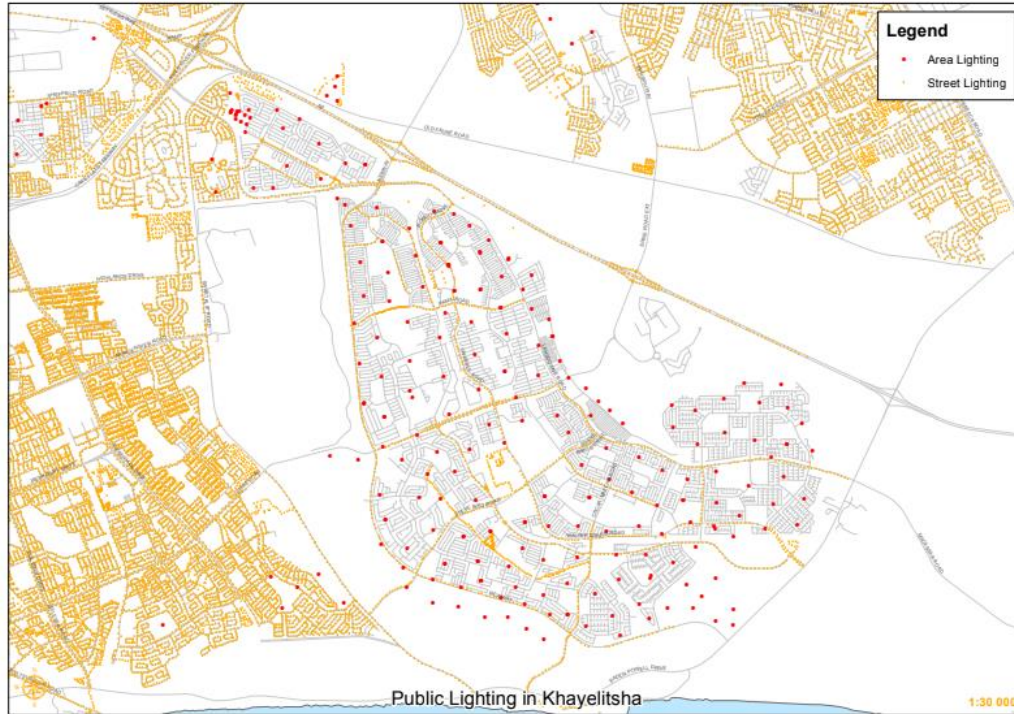
PICTURES OF INFORMAL SETTLEMENTS



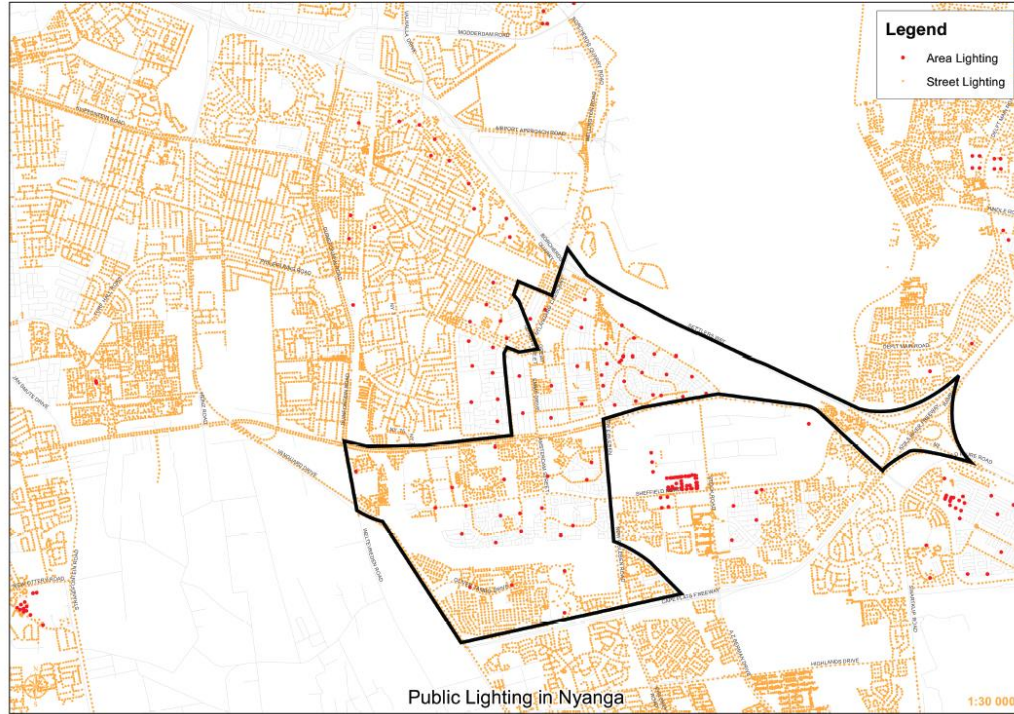
PICTURES OF BT
BLOCK DURING
DAY TIME

PICTURES OF
BT BLOCK
DURING
NIGHT TIME

Source:
SAPS Presentation at a Social Justice Coalition event
26 September 2016



If the allocation of police resources discriminates on the basis of race and poverty then surely this does too.



If the allocation of police resources discriminates on the basis of race and poverty then surely this does too.

Reducing Sexual Violence by Increasing the Supply of Toilets in Khayelitsha, South Africa: A Mathematical Model

Gregg S. Gonsalves , Edward H. Kaplan, A. David Paltiel

Published: April 29, 2015 • <https://doi.org/10.1371/journal.pone.0122244>

Article	Authors	Metrics	Comments	Media Coverage
⌵				

Abstract

Introduction

Materials and Methods

Results

Discussion

Supporting Information

Acknowledgments

Author Contributions

Abstract

Background

Sexual violence is a major public health issue, affecting 35% of women worldwide. Major risk factors for sexual assault include inadequate indoor sanitation and the need to travel to outdoor toilet facilities. We estimated how increasing the number of toilets in an urban township (Khayelitsha, South Africa) might reduce both economic costs and the incidence and social burden of sexual assault.



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The SJC was made aware of the *Civilian Secretariat's Analysis of Resource Allocation in the SAPS* (the Analysis) during a presentation to the Portfolio Committee on Police on 27 February 2018. We approached the Secretariat and the Minister of Police requesting that the Analysis in its entirety be made public.

Although the Analysis focuses on the allocation of human resources and vehicles to police precincts, it also reveals a police service that often is not where it needs to be because it asks the wrong questions and uses the wrong data to inform deployment.

According to the Analysis, the input sheet used to inform the allocation of human resources has a single gang indicator and “falls short of accounting for the frequency of gang violence, the size, the nature of the particular gangs [and] gang activities”. This failure to account for the impact, size and nature of gangs means that police aren’t where they are needed and this has created the space for the ill-advised and opportunistic call for the deployment of the South African National Defense Force in communities.

TABLE 2: CRIMINAL BEHAVIOUR MOTIVES MURDER



Murder	Gang-related	Taxi-related	Illicit mining	Farm murders	Police Officials	Mob justice	Political related
Eastern cape	87	39	0	3	13	72	0
Free State	46	1	65	8	8	10	0
Gauteng	14	110	23	12	28*	264	0
KwaZulu-Natal	2	36	0	7	19	145	30
Limpopo	0	1	0	9	3	95	0
Mpumalanga	3	4	6	8	6	83	0
Northern Cape	0	0	0	3	0	0	0
North West	13	1	0	9	2	7	0
Western Cape	808	45	0	3	6	173	2
RSA	973	237	94	62	85	849	32

* Includes 10 officers based at head office

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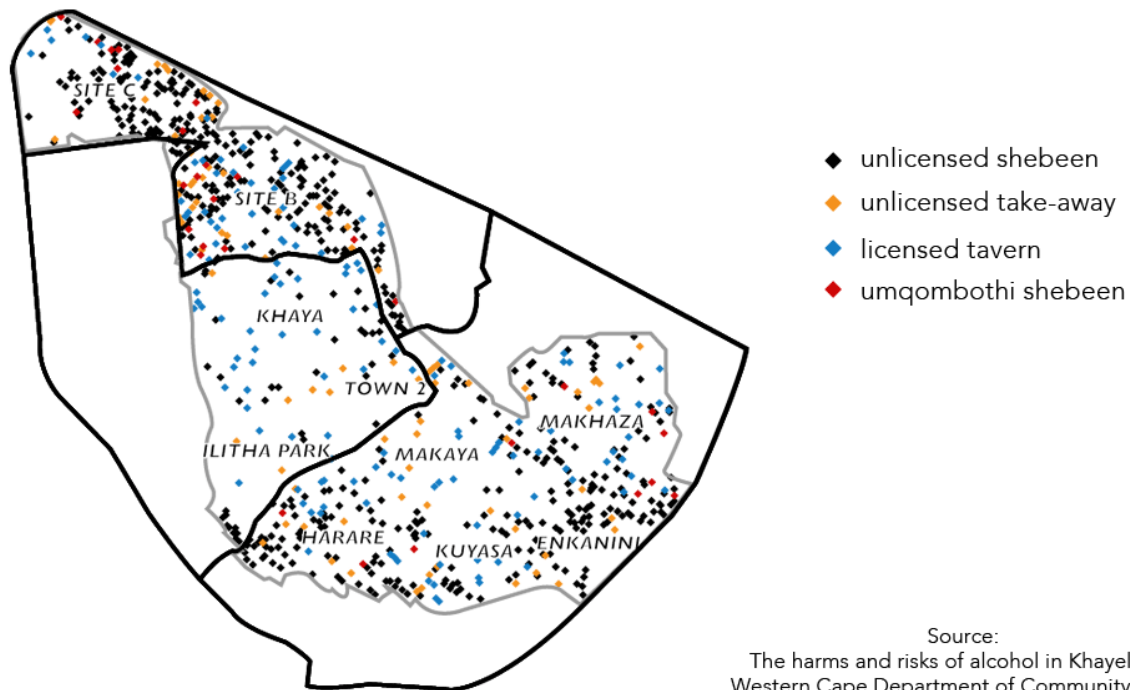
21% of all murders in the Western Cape Province are attributed to gang violence for the financial year April 2017 to March 2018. This amounted to 808 gang deaths of 3729 for the entire Western Cape Province.

Source:
SAPS Presentation to the Portfolio Committee on
Police
11 September 2018

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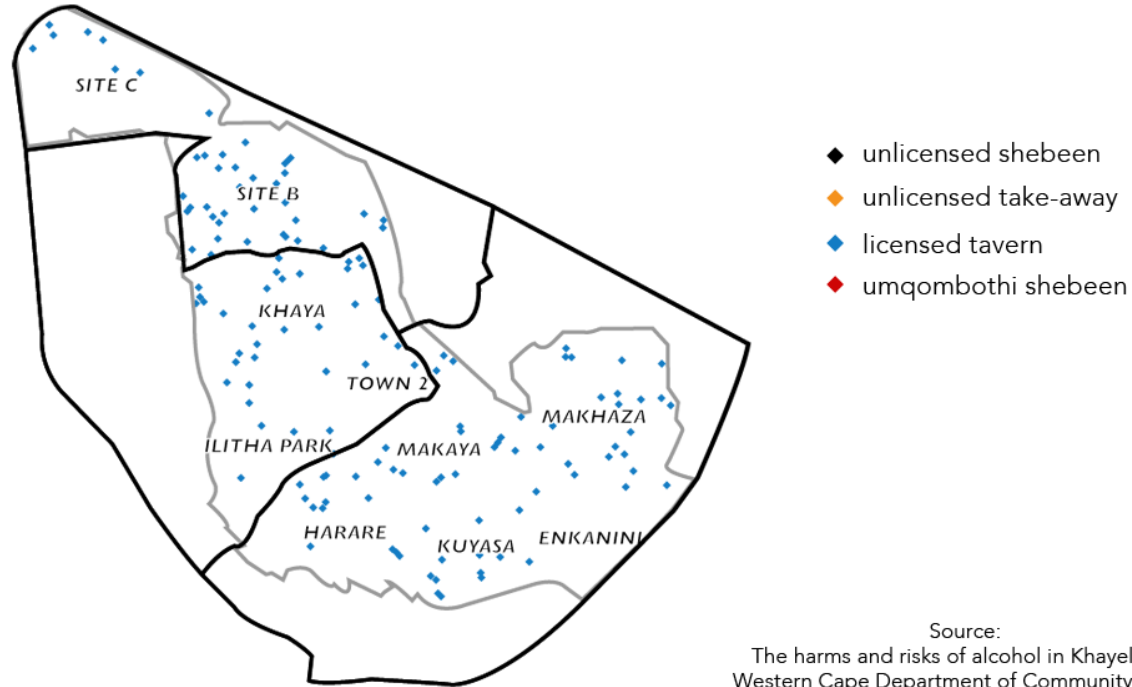
“The SAPS repeatedly draw links between the levels of alcohol use and abuse and high levels of violence.” Despite this, when allocating resources, the SAPS does not take into consideration the number of unlicensed liquor outlets in a given area. In short, the system for allocating resources “does not include reference to one of the major sources of alcohol in some communities which may vastly escalate the levels of violence”. The Analysis states that in informal areas that do not meet zoning bylaws, the number of unlicensed outlets can be four times more than licensed outlets.

Distribution of licensed and unlicensed alcohol outlets in Khayelitsha



Source:
The harms and risks of alcohol in Khayelitsha
Western Cape Department of Community Safety

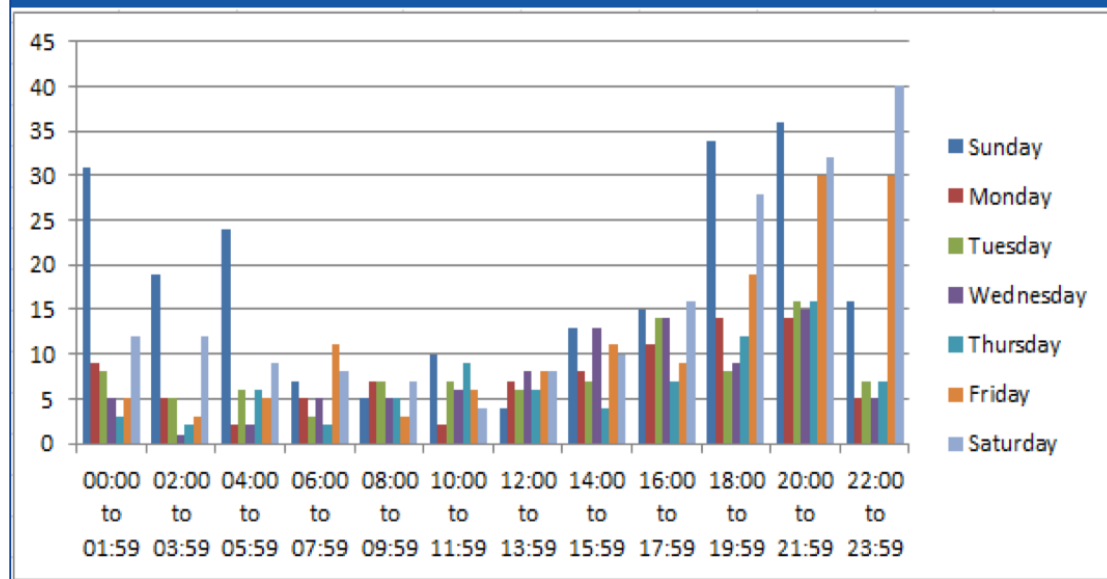
Distribution of licensed and unlicensed alcohol outlets in Khayelitsha



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The harms and risks of alcohol in Khayelitsha
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POST KHAYELITSHA RECOMMENDATIONS CRIME PATTERNS



Source:
SAPS Presentation at a Social Justice Coalition event
26 September 2016

1. Additional eyes on geo-tagged data can significantly bolster the fight against crime.
2. Making geo-tagged data public would allow for site-specific interventions to be undertaken by other state organs, levels of government and civil society actors.
3. Making geo-tagged data public would allow communities to avoid crime hotspots and to develop their own interventions.
4. If SAPS honestly believes environmental design contributes to and hinders their ability to respond to crime, then collecting and making geo-tagged data available would only bolster their pleas for municipal governments to intervene.
5. In making the data public SAPS would also be able to more readily draw on, and include other data sets in their efforts to identify root causes, modus operandi, suspects, vulnerable groups, contributing factors, mitigating factors, risks to police officers, flashpoints, new emergent trends, displacement of crime from one area to another etc.



Africa Criminal Justice Reform
Organisation pour la Réforme de la Justice Pénale en Afrique
Organização para a Reforma da Justiça Criminal em África



Does policing prevent crime?

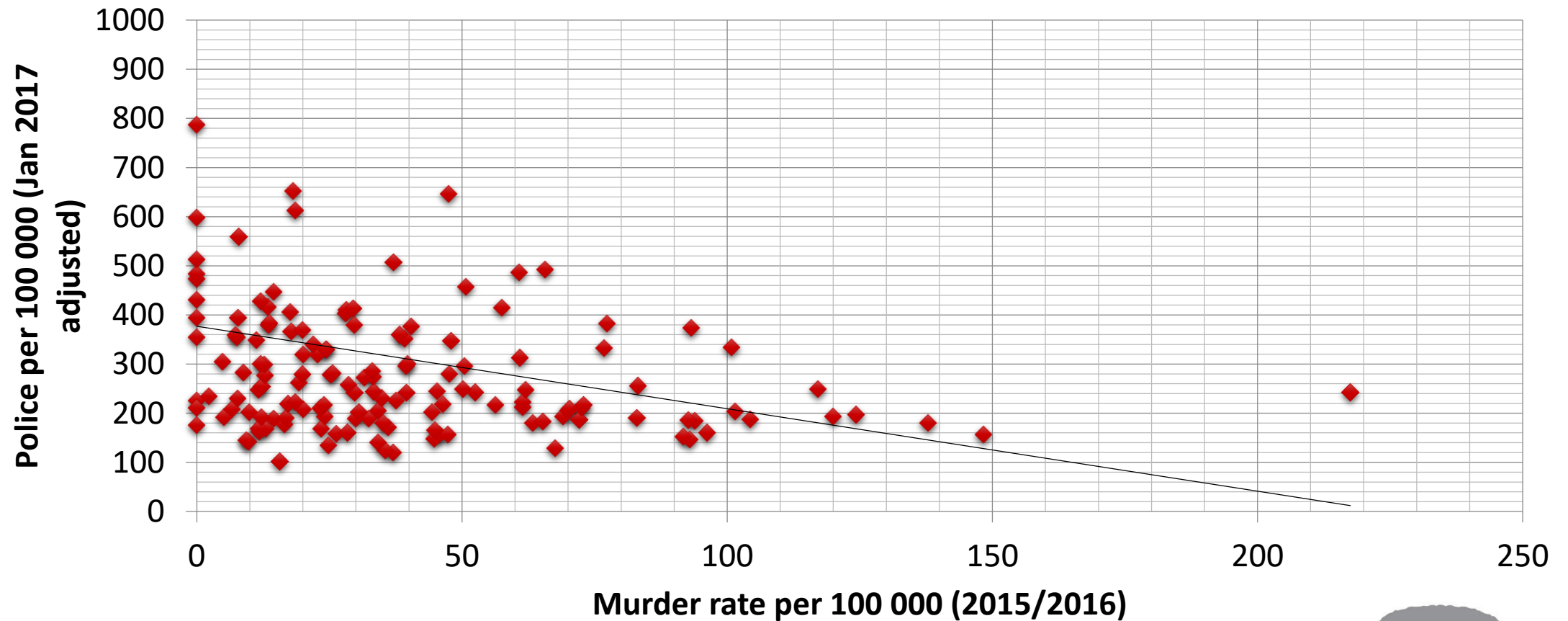
Jean Redpath
21 November 2018



Inequality of resources

- “Unconscionable” inequalities exposed during Khayelitsha Commission
- Partly a result of problems in the formula used by SAPS to allocate human resources, including reliance on reported crime
(See Redpath & Nagia-Luddy in Crime Quarterly)
- Three years later no significant adjustments to policing numbers by SAPS

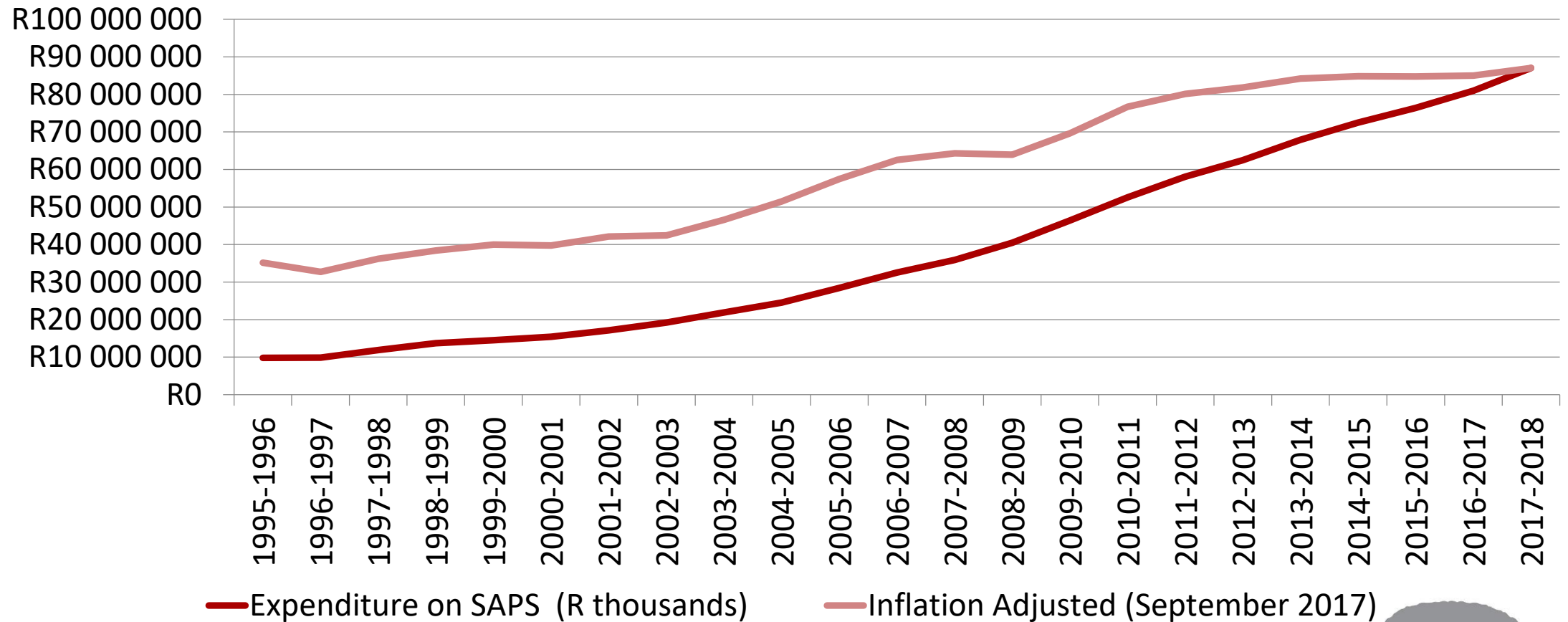
Relationship between murder rate and police allocations the next year, Western Cape precincts



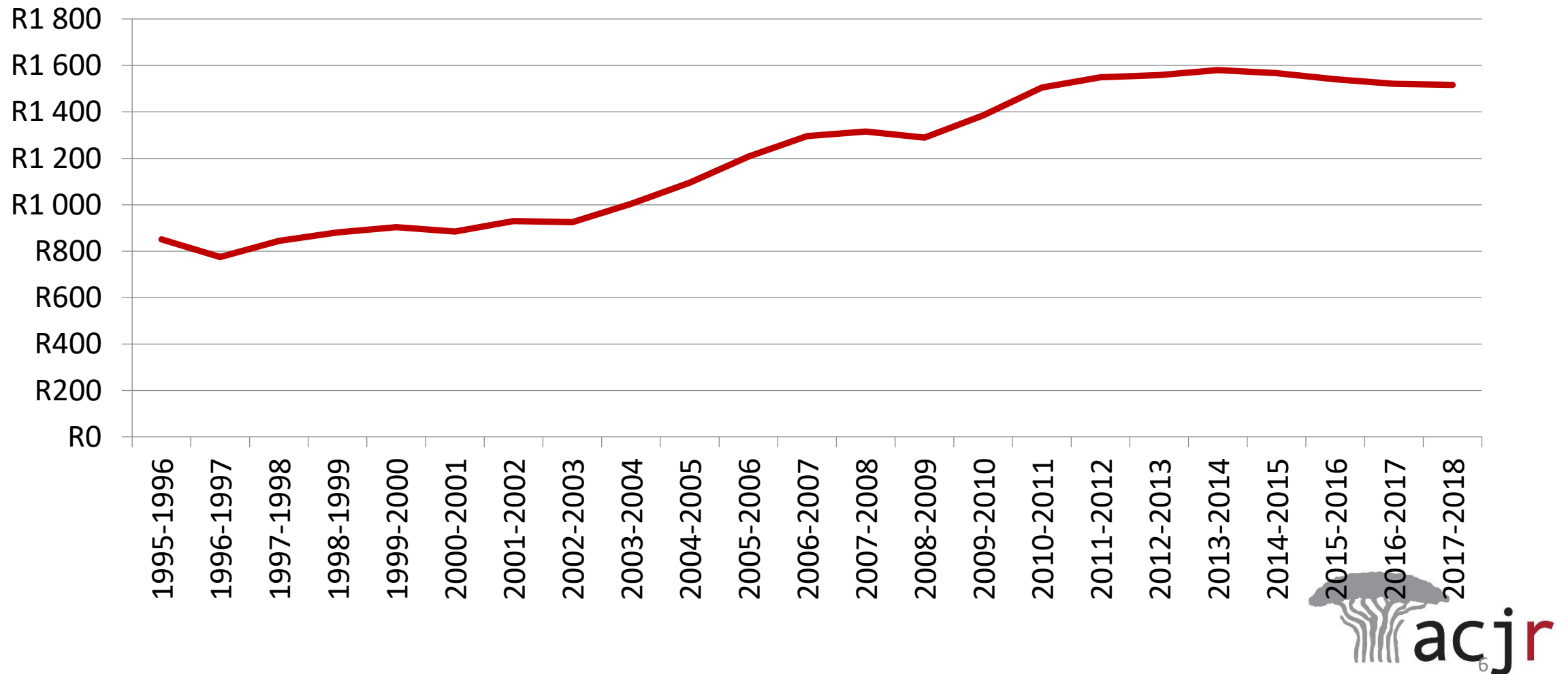
“Additional police have no impact”

- Litigation by Social Justice Coalition vs SAPS, Minister
 - Additional data made available for whole country
 - SAPS claims “no impact” of additional resources
- In all countries impact of policing difficult to demonstrate quantitatively
 - More policing may result in MORE reported crime
 - US study found that one extra police official associated with 5 additional reported crimes
 - Year-on-year changes are usually in single digits
 - Nyanga with 244 police = 120 per 100 000
 - Would need doubling of resources to reach median value
- Murder rate offers a solution in South African context to measuring impact on violent crime

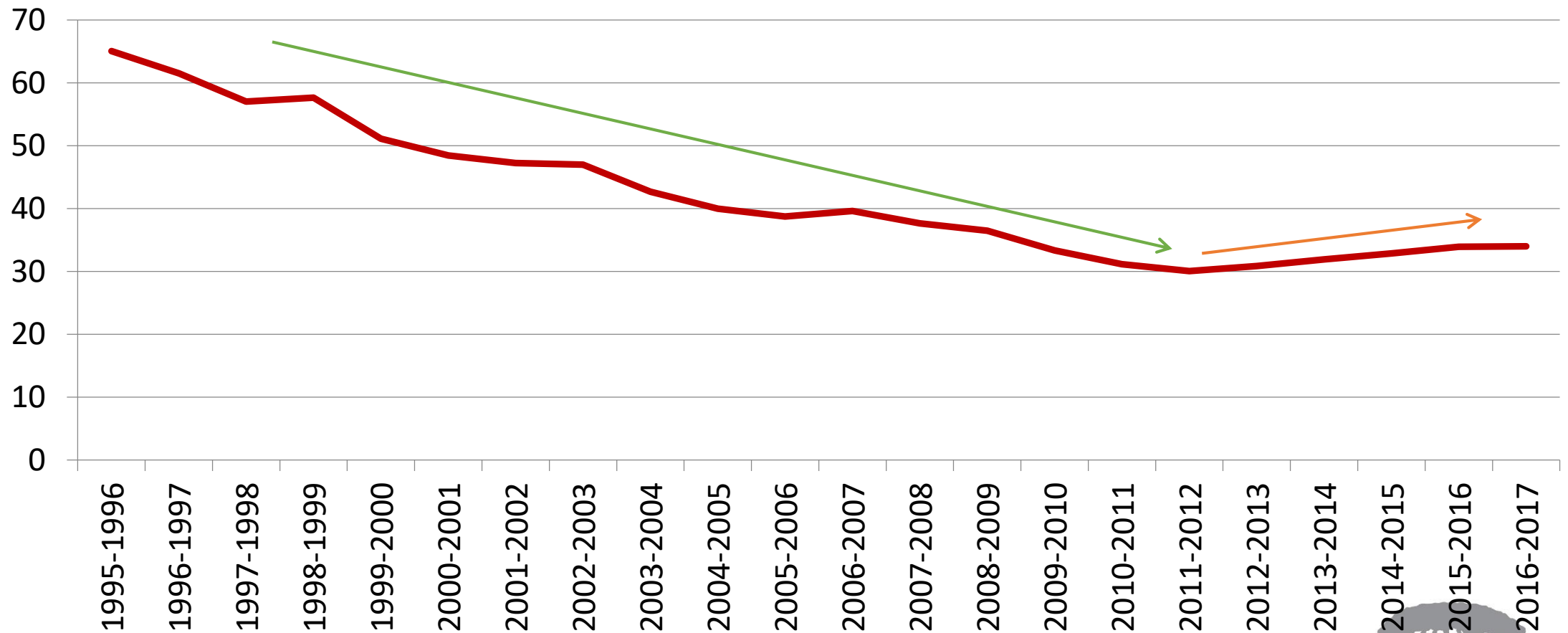
Expenditure on SAPS since 1995



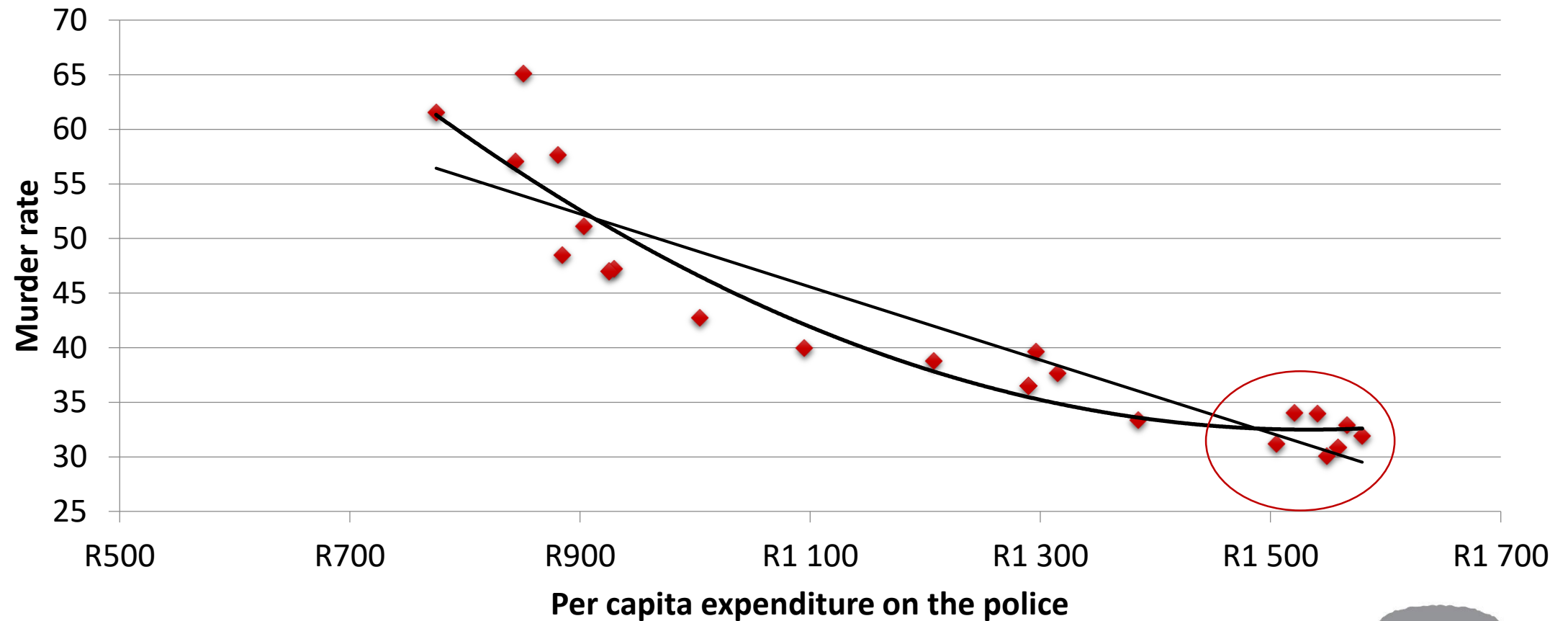
Real per capita expenditure on SAPS



Murder rate in South Africa since 1995



Relationship between per capita expenditure on SAPS and the murder rate in South Africa



Interpretations

- **If the linear trend holds**, suggests that bringing South Africa's murder rate closer to 6 per 100 000 would require an additional R44 billion investment p.a. at 2017 prices: SAPS budget of R125 billion.
- Possible the data is better described by a **curve**, which implies initial steep improvements as expenditure increases, followed by diminishing returns at higher levels of expenditure.
- Perhaps the **relationship was linear before 2012** – i.e. SAPS was able to convert financial resources into results, albeit at high cost – but aspects of SAPS operation or the external environment changed post-2012 which made SAPS ineffective.
- A further interpretation is that the periods of the lowest murder rates (2008-2012) correspond with the beginning of the period of intensification of “state capture” and in particular the much-publicised “capture” of Crime Intelligence – associated with lower levels of acquisitive violence?
- A further possibility is that there is no relationship at all between spending on police and the murder rate and that **police spending is simply a reflection of South Africa's GDP**, and the murder rate in turn reflects GDP?

Testing impact of GDP

- Per capita GDP is significantly associated with changes in the murder rate, with per capita GDP predicting 88% of the variation in the murder rate.
- **Multivariate analysis** shows that change in spending on police retains an independent impact, in the direction of reducing the murder rate, but in a much less pronounced way
 - Each additional R153 per capita on spending on the police, at the same GDP, is associated with a drop of one murder per 100 000 i.e. each additional murder prevented South Africa-wide, at the same GDP per capita, would cost R15.3 million.
 - Problems with **collinearity** mean such *estimates must be treated with caution*.

Testing impact of number of police

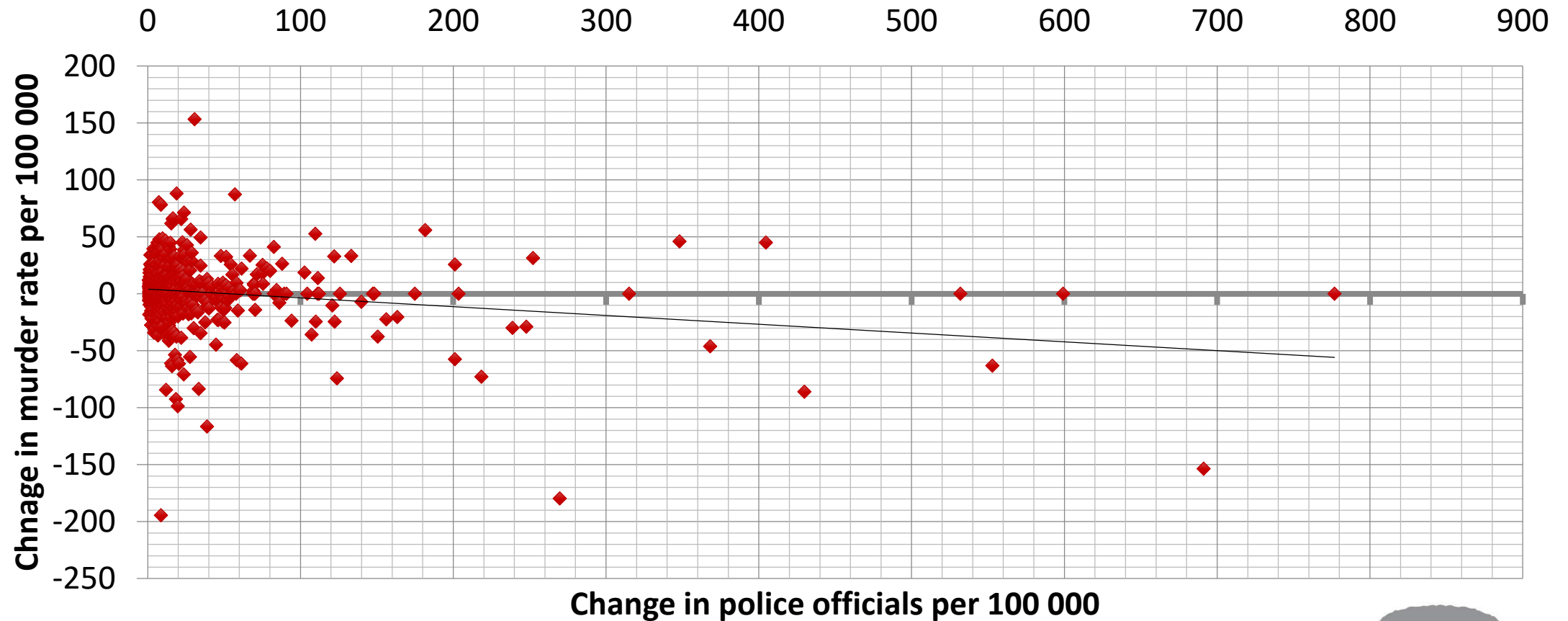
- A multivariate analysis using a model including **GDP per capita**, **police spending per capita**, and **number of SAPS employees per 100 000** tested against the murder rate suggests the following:
 - Holding police spending and number of police per 100 000 constant, an *increase in GDP per capita **increased** the murder rate*
 - Holding GDP per capita constant and the number of police per 100 000 constant, police spending is associated with a reduced murder rate.
 - An additional R39 per capita is associated with one fewer murders per 100 000 i.e. each additional murder prevented costs R3.9 million.
 - Holding GDP per capita constant and police spending constant, 13 additional police per 100 000 are associated with one fewer murders per 100 000 people.

Testing changes to police allocations at police precinct level

- Allocations over the period 2013 to 2016 for the whole of South Africa (1140 police precincts) made available in litigation.
- The overall increase in number of police officials allocated to police stations comparing the years was only 2.4%, with the average increase in police officials being only by 12 per 100 000.
- **No significant relationship** with murder rate is found – unless one excludes those precinct areas with fewer than 1000 residents, resulting in a dataset of 1121 police precincts (2% predictive value).
- Confining the analysis further to only those 646 police precincts which experienced an increase in police resources, raises the predictive value to 4% and with every additional 13 police officials being associated with one fewer murders per 100 000.

Change in police officials and change in murder

South Africa, 2013/14 to 2015/16, police precincts >1000 residents receiving an increase in police officials



Police allocations complications

- Allocation of police human resources sensitive political issue because it is determined at national level.
 - Overall spend on SAPS determined by national Treasury
 - “Fixed establishment” is determined by the National Commissioner, constrained by the funds allocated to SAPS nationally by Treasury.
 - SAPS provincial commissioners (but not MECs) can move people within province but cannot change overall allocation to province.
- Not all functions of the SAPS are carried out at police station level
 - The SAPS Act stipulates that some key functions are “national” and these are carried out by “divisions” of the national SAPS, which employ some 40% of all SAPS members,.
- Extent to which policing is prioritised financially in any province compared to other priorities concerned is thus determined nationally.

Conclusion

- Analysing murder rates and police spend data over time suggests that policing may prevent violent crime.
- Analysing increases in allocations and change in murder rates suggests upward adjustment of allocations may also prevent violent crime.
- National government holds the responsibility to ensure that such allocations are made rationally.

The potential of spatially-based crime research in South Africa

Prof. Gregory Breetzke

Department of Geography, Geoinformatics and
Meteorology
University of Pretoria



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

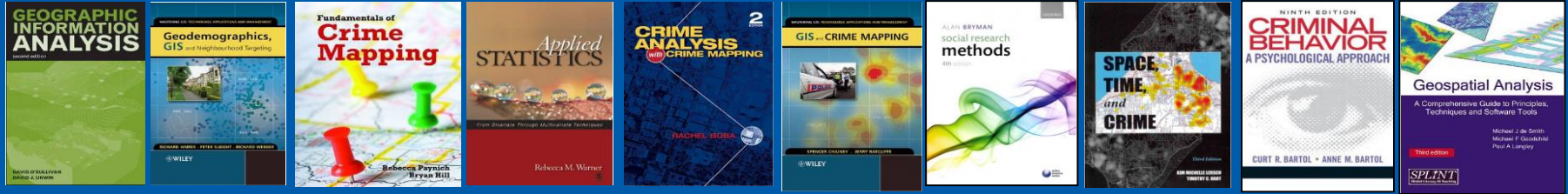
Faculty of Natural and
Agricultural Sciences

Fakulteit Natuur- en Landbouwetenskappe
Lefapha la Disaense tša Tlhago le Temo

Make today matter

21/11/2018

GIS and crime



1. Crime Mapping
Rates and statistics
2. Spatial Analysis
Hot spot analysis, journey-to-crime modelling, geographic profiling, repeat victimization
3. Ecological Analysis
The relationship between crime and variables

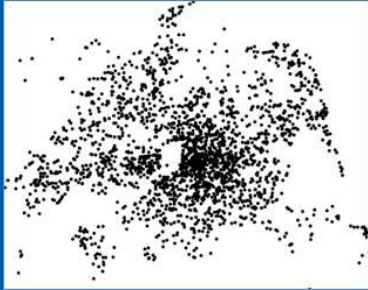


Research interests

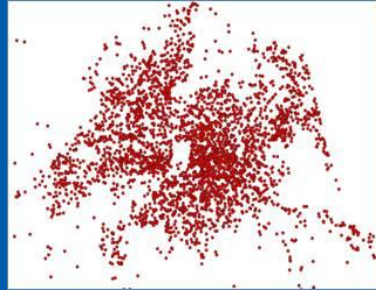
- Crime in gated communities (SA)
- Seasonality of crime (SA and US)
- Spatio-temporal association between crime and sporting events (SA)
- Crime and alcohol availability (SA, NZ, US)
- Topography of crime (SA)
- The relationship between crime, the fear of crime and health (NZ)
- Impact of a changing climate on spatial crime patterns (SA)
- Crime resilient communities (SA and NZ)
- Recidivism (NZ)
- Racial divisions in crime (SA)
- Gang crime (NZ)
- Crime generators/attractors (SA and US)



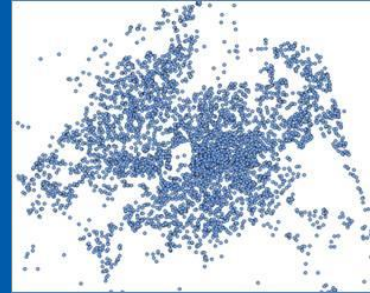
Importance of data



Burglary Theft
12am - 7am



Burglary Theft
7am - 12pm



Burglary Theft
12pm - 18pm



Burglary Theft
18pm - 12am

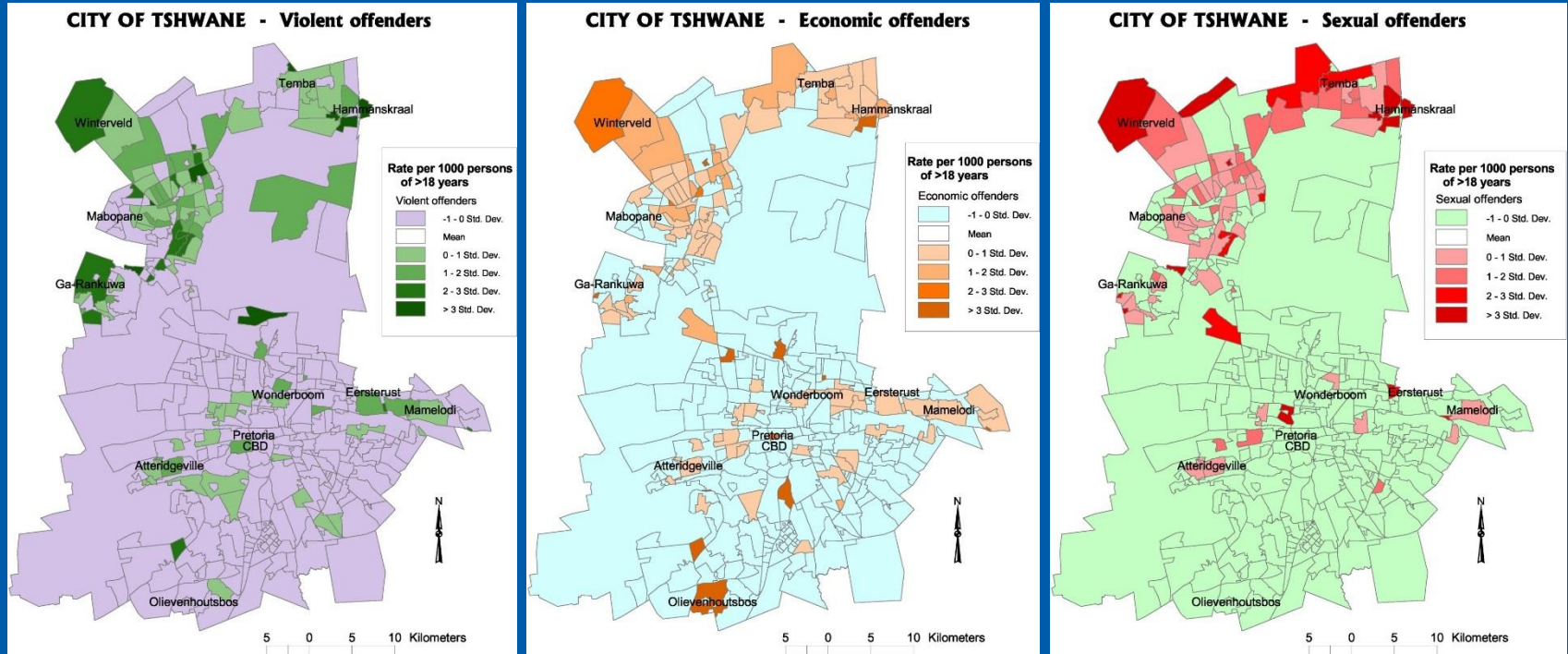
- Data for whom....?
- Limitations

Examples

1. A socio-geographic profile of offenders in the city of Tshwane
2. The spatial concentration and stability of crime in Khayelitsha
3. Crime generators in South Africa: Evidence from Khayelitsha

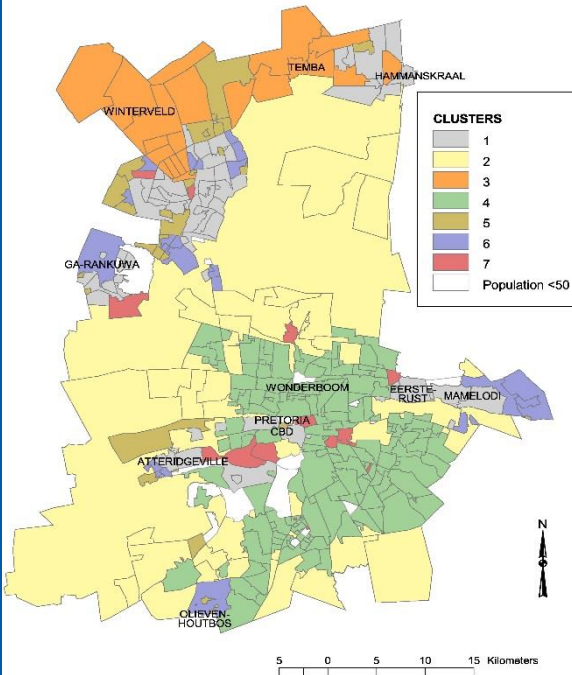


(1) Offenders in Tshwane

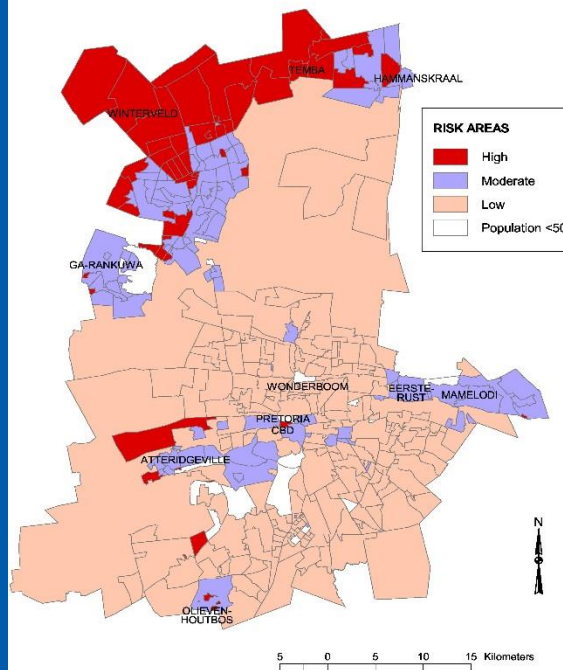


(1) Offenders in Tshwane

City of Tshwane (CTMM)



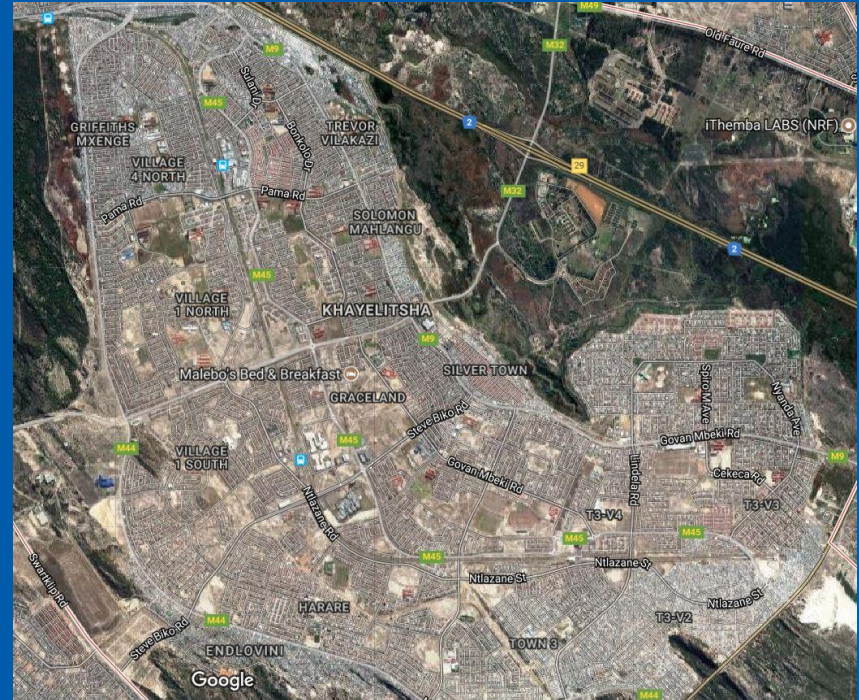
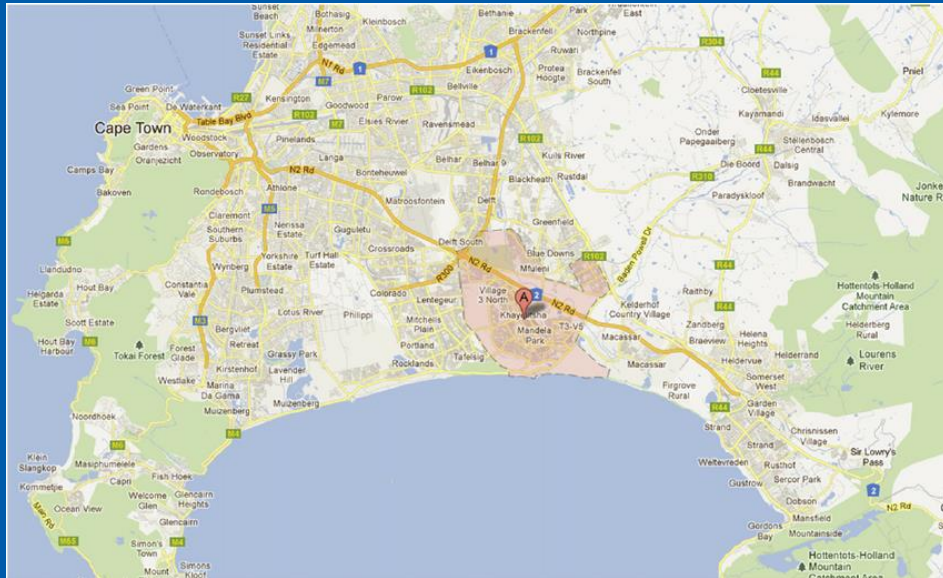
City of Tshwane (CTMM)



- The location of offenders was found to be associated with the spatial incidence of four broad factors: -

1. low social status and income,
2. a large and young family,
3. unskilled earners, and
4. high residential mobility

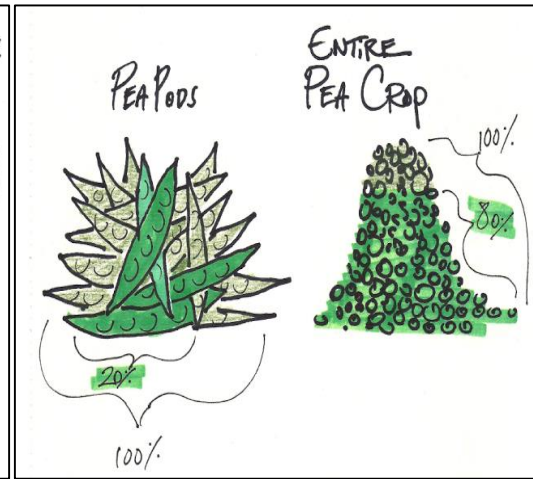
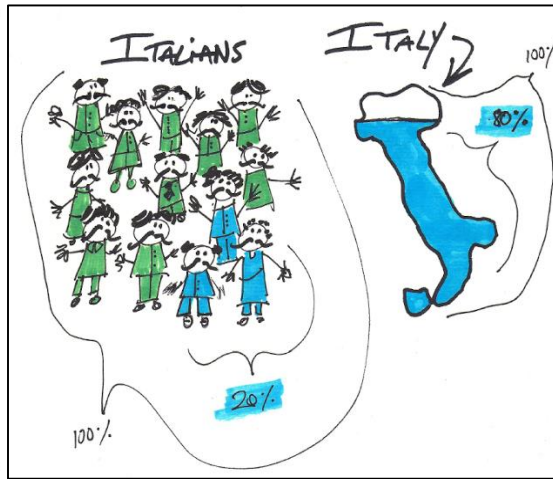
Two other examples



the Pareto principle

(a.k.a. the 80-20 rule)

©2012 19th Figure
ECONOMICS



RIGHT :

in retail,

80% of SALES
come from
20% of CLIENTS

RIGHT :

in business,

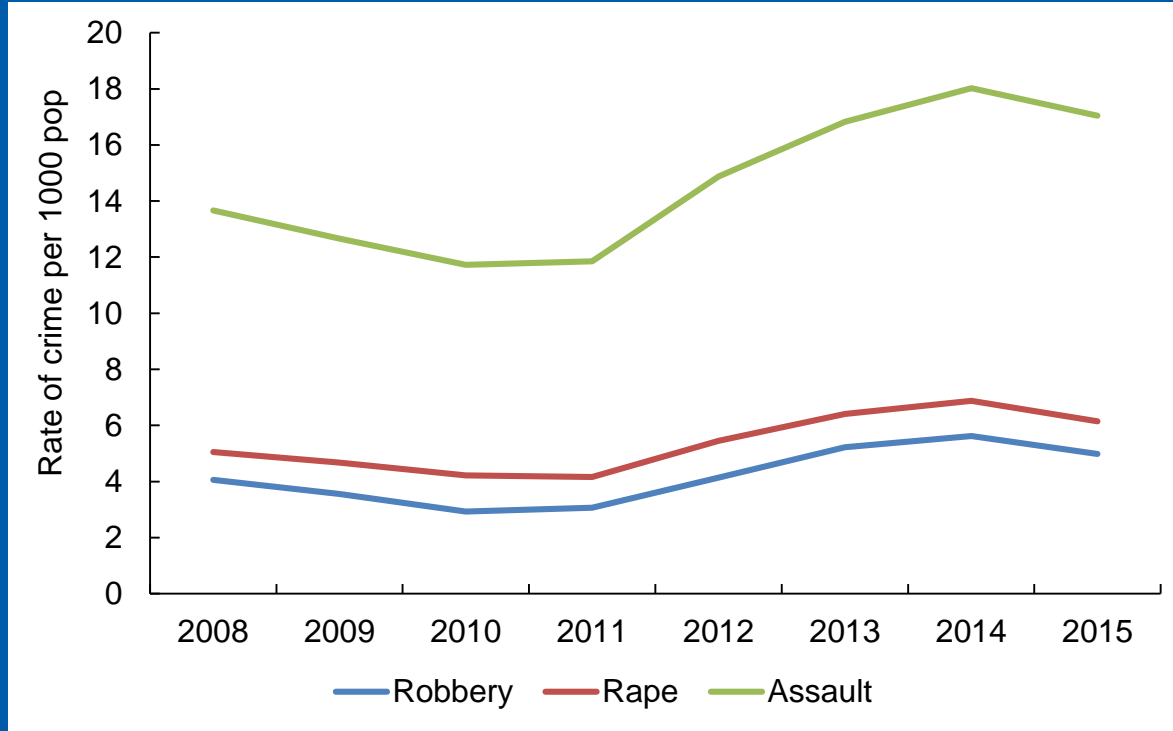
80% of COMPLAINTS
come from
20% of your CUSTOMERS

RIGHT :

in health care,

80% of HEALTH CARE
RESOURCES
are used up by
20% of PATIENTS.

2) Spatial concentration of crime

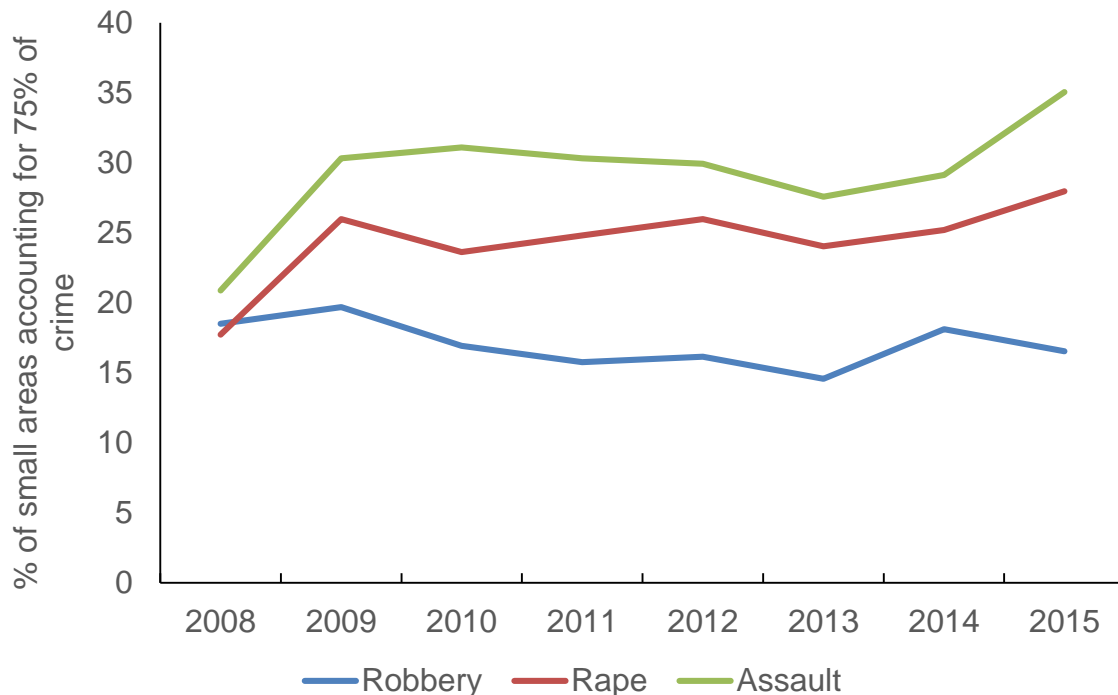


2) Spatial concentration of crime

- Between 5-15% of small areas contained 50% of all crime incidents year-on-year.

In Tshwane

- Top 5 neighbourhoods
 - Violent: 20%
 - Property: 22%
 - Sexual: 17%

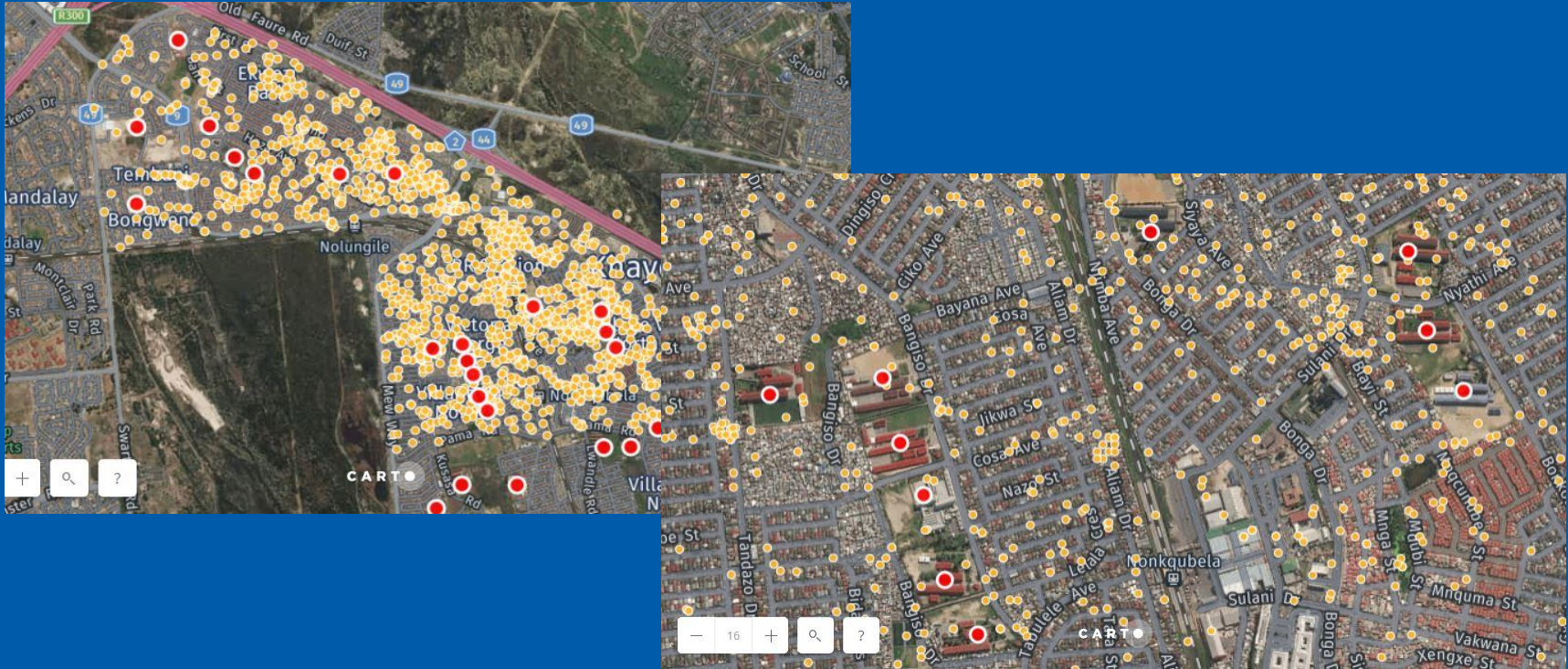


2) Spatial concentration of crime

- Percentage of the same small areas in the upper quartile of crime for Khayelitsha from 2008 onwards

	Rape	Robbery	Assault
Base year: 2008	25 ($n = 63$)	25 ($n = 63$)	25 ($n = 63$)
2008-2009	11.42 ($n = 29$)	13 ($n = 33$)	11.81 ($n = 30$)
2008-2010	6.30 ($n = 16$)	8.66 ($n = 22$)	7.48 ($n = 19$)
2008-2011	5.12 ($n = 13$)	6.30 ($n = 16$)	6.69 ($n = 17$)
2008-2012	3.54 ($n = 9$)	5.51 ($n = 14$)	4.33 ($n = 11$)
2008-2013	2.36 ($n = 6$)	5.12 ($n = 13$)	3.54 ($n = 9$)
2008-2014	1.97 ($n = 5$)	4.72 ($n = 12$)	3.15 ($n = 8$)
2008-2015	1.97 ($n = 5$)	4.33 ($n = 11$)	3.15 ($n = 8$)

3) Crime generators and attractors



3) Crime generators and attractors

Facilities	No. of facilities	Mean IVA of robberies within 100m	Range (min, max)	% of facilities with 50 or more robberies within 100m	Mean IVA of robberies within 200m	Range (min, max)	% of facilities with 50 or more robberies within 200m
Schools	20	10.36	(0.26, 25.75)	30	53.26*	(9.06, 96.51)	85
Recreational hub	8	14.1	(1.62, 32.04)	37.5	66.24*	(12, 150.32)	100
Transport interchange	14	17.14**	(0, 57.36)	42.9	55.58*	(1.14, 115.04)	64.3
Random points	100	7.57 ^a	(0, 33.69)	12	30.33	(0, 136.86)	55

$p < 0.05$, ** $p < 0.005$, *** $p < 0.001$

^a Facility type: Random points vs. the other facilities

- Assault:
 - 100m (-)
 - 200m (School, Transport Interchange)
- Rape:
 - 100m (-)
 - 200m (Schools)



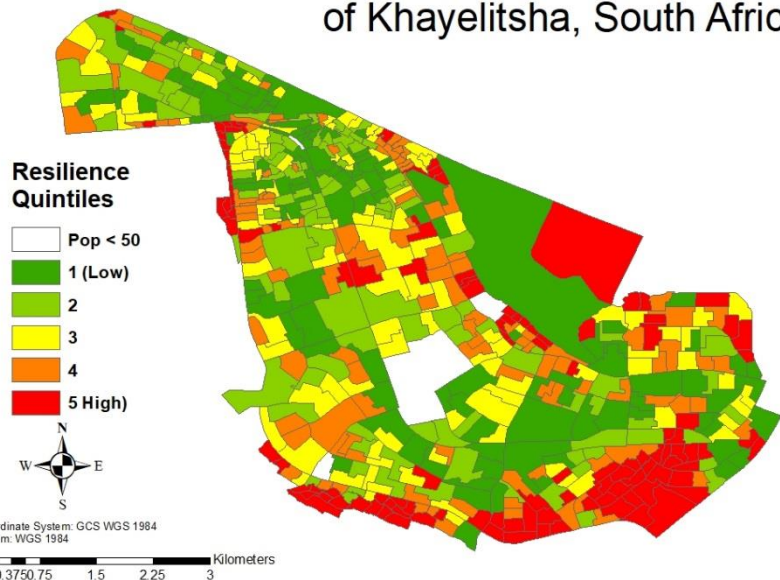
Current and ongoing research

- Project 1:
 - The impact of the built environment on resilience to crime in Khayelitsha, South Africa (*Lauren Pijper, UP*)
 - Project 2:
 - A street segment analysis of crime in Khayelitsha (*Kathleen Godfrey, UP*)
 - Project 3:
 - The seasonality of crime: A comparison across two townships in the Western Cape province of South Africa (*Francois Schutte, UP*)
 - Students being supervised by Prof Gregory Breetzke and Dr Ian Edelstein
-



Current and ongoing research

Resilience Quintiles of the Neighbourhoods of Khayelitsha, South Africa



Neighbourhood Factors - Built Environment		Low			High			RHO	p-value
		R1	R2	R3	R4	R5	R5:R1		
Healthcare	Clinics (distance)	0.65	0.72	0.73	0.77	0.84	1.29	0.18*	0.00
	Fire stations (distance)	1.38	1.42	1.48	1.60	1.85	1.34	0.25*	0.00
	Police stations (distance)	1.62	1.48	1.55	1.65	2.17	1.34	0.22*	0.00
	Hospitals (distance)	2.78	2.66	2.56	2.43	2.42	0.87	-0.16*	0.00
Living infrastructure	Community centres (distance)	0.59	0.58	0.59	0.69	0.82	1.38	0.25*	0.00
	Community parks (distance)	0.46	0.41	0.37	0.39	0.46	1.02	0.01	0.87
	District parks (distance)	2.96	3.06	2.87	2.64	2.55	0.86	-0.13*	0.00
	Greenbelts (distance)	1.17	0.94	0.97	0.87	1.00	0.86	-0.08	0.06
	Libraries (distance)	0.75	0.82	0.81	0.96	1.17	1.55	0.31*	0.00
	Places of worship (distance)	0.60	0.57	0.57	0.57	0.81	1.36	0.15*	0.00
	Sportsgrounds (distance)	1.00	1.00	1.05	1.05	1.29	1.28	0.18*	0.00
	Cemteries (distance)	2.96	2.79	2.84	2.93	3.11	1.05	0.14*	0.00
	IRT bus stops (distance)	0.72	0.79	0.80	0.79	0.75	1.04	0.01	0.87
	IRT bus routes (distance)	0.50	0.50	0.54	0.50	0.58	1.17	0.05	0.22
	Pools (distance)	2.72	2.60	2.50	2.34	2.43	0.89	-0.14*	0.00
	Cape Cares facilities (distance)	0.94	1.00	0.99	1.02	1.02	1.09	0.05	0.19
	Landfills (distance)	3.35	3.22	3.03	3.05	3.43	1.02	-0.03	0.50
	Municipal courts (distance)	2.87	2.80	2.64	2.48	2.50	0.87	-0.14*	0.00
	Recreational hubs (distance)	1.38	1.30	1.30	1.44	1.99	1.45	0.27*	0.00
	Public open spaces (distance)	0.41	0.47	0.41	0.39	0.47	1.15	0.03	0.48
	Waterbodies (distance)	0.24	0.29	0.27	0.30	0.41	1.68	0.19*	0.00
Education	Primary schools (distance)	0.37	0.36	0.39	0.40	0.56	1.53	0.25*	0.00
	Secondary schools (distance)	0.56	0.50	0.52	0.52	0.74	1.33	0.21*	0.00
Vices	Valid license liquor outlets (distance)	0.42	0.35	0.35	0.39	0.44	1.04	0.04	0.37
(distance) = Distance in kilometres from centroid *Correlation is significant at 0.01 level									

(distance) = Distance in kilometres from centroid *Correlation is significant at 0.01 level

- The impact of the built environment on resilience to crime in Khayelitsha, South Africa (Lauren Pijper, UP)



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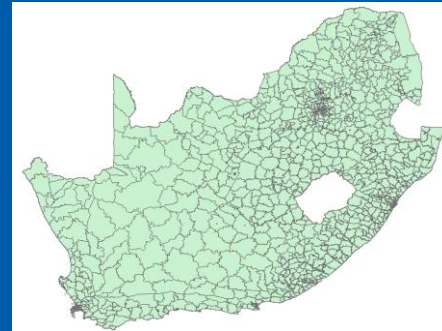
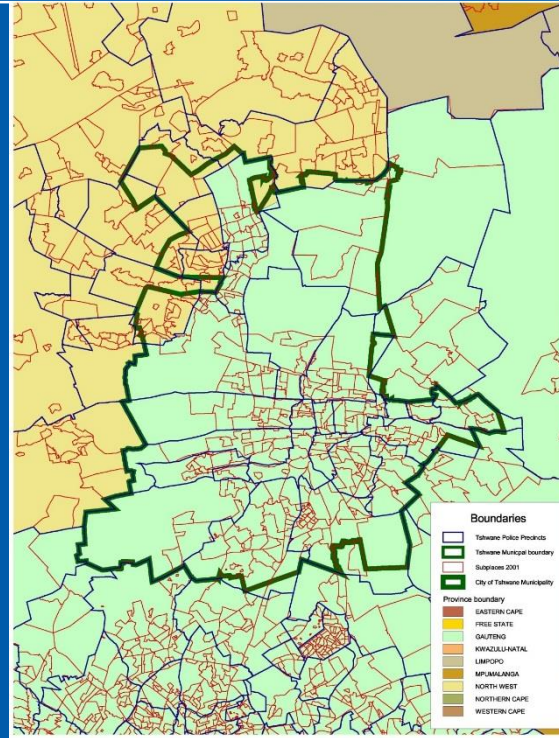
So what! Practice and policy

- Tactical
 - Guide operational units to specific locations and individuals linked to criminal activities, potentially leading to the arrest of wanted suspects and suspicious persons
- Operational
 - Inform a number of operational actions. For example, the routes for vehicle and foot patrols; the locations of road-blocks; the locations of cordon-and-search and stop-and-search operations.
- Strategic
 - Addressing the long-term solutions to crime and highlight the root causes of crime and measure ways to address them.



Spatial challenges

- Spatial data issues
 - Misalignment
 - Geocoding
- A national spatial information system
 - CAS
- Crime statistics
 - Online, accessible
 - Publicly available
 - Timely
- Skills, competencies
- Support



A call

- **Idea:** Cross-institutional GeoCrime Laboratory undertakes applied research in the areas of the geography of crime and Geographical Information Systems
- **Aim:** To build a strategic partnership between key role-players that deal with law enforcement in South Africa
- **Stumbling block**

JILL DANDO INSTITUTE OF SECURITY AND CRIME SCIENCE



SFU

SIMON FRASER UNIVERSITY
ENGAGING THE WORLD

Institute for Canadian Urban Research Studies



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Current situation

New Zealand Police Research Agreement

THIS AGREEMENT is made on 12 September 2018

BETWEEN Her Majesty the Queen in Right of Her Government in New Zealand acting by and through the Commissioner of Police ("Police")

AND the Principal Researcher: Gregory Breetzke

AND/OR Principal Researcher's Organisation Please note: If the principal researcher is employed by or affiliated to a NZ University the University will be the party to this agreement. This agreement should be entered into through the University's Research Office.

BACKGROUND

The NZ Police (hereinafter Police) want to make high-quality data available for research:

1. in as much detail as is necessary and possible
2. as widely as practicable
3. as soon as possible
4. as conveniently as is reasonable having regard to the impact on the activities of Police

while ensuring all legislative and ethical obligations governing access to, and safekeeping of, individualised and personal information are followed.

- a. The Principal Researcher has submitted to Police an application to undertake research, including a Research Proposal as set out as Schedule One ("The Application").
- b. The Researcher has submitted The Application after having read and understood the Police Policy for External Researchers Access to Resources, Data or Privileged Information
- c. Police has accepted and approved The Application.
- d. This Agreement documents the terms and conditions upon which Police allows the Researcher to conduct research accessing the resources of Police. The scope of the research is detailed in the approved Research Proposal appended as Schedule One.
- e. If the Researcher wishes, at any stage, for additional individuals to undertake research (or to substitute individuals) they must first obtain Police consent in writing and understand that those additional individuals may first need to clear appropriate and reasonable security and additional checks before undertaking research.
- f. The Researcher agrees to conduct research in accordance with The Application.

SIGNED by


(signature)

MELISSA SMITH
(name in block letters)


on behalf of THE COMMISSIONER OF NEW ZEALAND POLICE

Police National Headquarters
180 Molesworth Street
Wellington 6140

Director, Research and Evaluation
Police

SIGNED by the

Principal
Researcher


(signature)

GREGORY BREETZKE
(name in block letters)

16 INSKANS STR
LYNNWOOD RDIE
PRETORIA 0081
(address) SOUTH AFRICA

ASSOCIATE PROFESSOR
(Position)

SIGNED by
Researcher
[repeat as
necessary]

.....
(signature)

.....
(name in block letters)

.....
(address)

.....
(Position)

SIGNED by a
representative of the
Principal
Researcher's
Organisation,
[where necessary]

This may be a
Manager or CE and
depends on the
policy of the
organisation that
allows the principal
to enter into this
agreement.


(signature)

MTHEMBU
(name in block letters)

277 Johny
Clayton Street
Gaborone Botswana
(address)

Constable
(Position in Organisation)

Title:

A spatial and temporal
analysis of gangs and gang
violence in New Zealand



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Thank You

Gregory D. Breetzke, PhD

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Faculty of Natural and Agricultural Sciences

University of Pretoria

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E: greg.breetzke@up.ac.za

“Scientists should be on tap, but not on top”

Winston Churchill (1964)



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