

Implications of Disarmament on Spatio-Temporal Crime Displacement in North-Rift Counties of Kenya

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ABSTRACT

The use of disarmament as a hotspot policing strategy to contain insecurity has almost become the essential technique relied upon by law enforcement in the bandit-prone North-Rift Counties of Kenya. Yet, little is known about its implications on crime spatio-temporal displacement. Using the theory of state-society relations; strong societies and weak states' lens, this article aims to analyse the implications of disarmament, a widely used hotspot policing strategy, on crime displacement. This study used both quantitative and qualitative research methods. The population of the study was residents of the North-Rift Counties. A three-level sampling procedure was used to select the respondents. First, purposive sampling was used to select Turkana, Baringo, and West Pokot counties, the counties worst hit by crime and gazetted as hotspots. Second, two divisions within each county were randomly selected. Third, proportionate sampling was used to distribute the sample population (384) across all the divisions taking into consideration gender balance. Data collected using questionnaires and focus group discussion guides were analysed using both descriptive and inferential statistics. The findings show that spatial and temporal crime displacements were prevalent. Significant associations were established between disarmament and spatial crime displacement; $\chi^2(210, N = 378) = 2180.705^a$, $p = .0001$, Cramér's $V = .642$; and between disarmament and temporal crime displacement; $\chi^2(180, N = 378) = 2385.546^a$, $p = .0001$, Cramér's $V = .725$. Disarmament displaced crime spatially and temporally instead of controlling crime indicating the need for comprehensive security strategies. An integrated policing system that incorporates community-led policing initiatives together with hotspot policing strategies could address the spatio-temporal crime displacement.

Keywords: Disarmament, crime displacement, hotspot policing, cattle rustling, and banditry, rural, north-rift, Kenya

INTRODUCTION

Insecurity in the North-Rift Counties of Kenya has endured for decades with severe and fatal consequences. While the main cause of the insecurity is attributed to cattle rustling and banditry, the solution has been elusive. The rampant cattle rustling and banditry in the North-Rift has claimed tens of lives and led to huge property loss and damage (Musau, Ichani, and Mulu, 2023). Moreover, the proliferation of small arms and light weapons (SALWs), coupled with weak governance structures, has exacerbated insecurity in the region (Alusa & Kanyinga, 2016). To combat the insecurity situation and pacify the North-Rift, government imposed several hotspot policing strategies such as disarmament to contain the situation. While hotspot policing strategies like

disarmament have mildly been effective in addressing insecurity in urban and sub-urban areas (Weisburd and Telep 2014).), there is a significant gap in understanding its implications on crime displacement in rural conflict-prone regions like the North-Rift Counties of Kenya.

As such, the association between disarmament as a hotspot policing strategy and crime displacement particularly in the North-rift counties of Kenya remain underexplored, yet this strategy has been used several times across the north-rift regions. Disarmament has been lauded as an intervention that has slightly reduced crime in the targeted areas although there has been growing evidence that it may be displacing criminal activities to neighbouring regions (spatial crime displacement) or different times (temporal crime displacement) rather than eliminating crime entirely (Marigat and Cheruiyotomo 2022). Persistent period attacks by bandits and cattle rustlers point towards this conclusion (Chepyegon, 2023). This study examines the implications of disarmament as a hotspot policing strategy on spatio-temporal crime displacement in North-rift counties of Kenya.

LITERATURE REVIEW

Using disarmament to suppress insecurity has remained one of the common crime hotspot strategies in the North-Rift of Kenya. As has been the case with most crime hotspot policing strategies, the consistency in the use of disarmament strategy has however not been marched by research. The few researches on hotspot policing strategies on crime displacement have generally been inconclusive (Halford et al., 2024; Lazzati and Menichini 2016; Rosenbaum, 2006), have had limited geographical scopes (Collazos et al., 2021; Braga et al., 2019;), and have been conducted in urban or peri urban areas (Haberman et al., 2025; Weisburd and Telep 2014). For disarmament, there is significantly less awareness of its implications on crime displacement especially in rural crime-ridden frontiers (Weisburd and Telep 2014).

The significance of disarmament as a strategy in fighting crime and conflict cannot be understated. While acknowledging that illicit arms have contributed to rise in crime, the United Nations Centre for Regional Development (UNCRD) has argued that disarmament could significantly reduce these illegal tools of violence (UNCRD, 2017). The objective of disarmament, broadly speaking, is to control illegal arms and light weapons to contain runaway crime, conflict, and general instability (Levin, 2015). Whereas disarmament is a targeted policing approach to fighting crime, the results of its use in terms of crime reduction and control overall in Kenya's North-Rift Counties remain minimal since the crime it anticipated to dissipate (banditry and cattle rustling) has endured. We argue that instead of diffusing crime reduction effects, the potential for spatio-temporal crime displacement has been highly probable.

Spatio-temporal crime displacement is a negative consequence resulting from crime prevention strategies. It is the relocation of crime from one place to another and from one time frame to another time frame because of crime prevention strategy (Guerette, 2016). Research has shown that disarming crime hotspots produce a drop in crime rates but only for some period (Braga, Papachristos, and Hureau 2014; Phillips, 2011). Even so, these findings have exclusively been based on studies conducted in urban places. Notably, implications of disarmament on crime displacement in rural areas remain under researched (Weisburd & Telep 2014) and inconclusive. There is need to solidly anchor disarmament and spatio-temporal crime displacement effects that threaten to undo the successes of hotspot policing in rural North-Rift Counties of Kenya.

The North-Rift is arguably the arc of insecurity in Kenya due to rampant, incessant, and persistent banditry and cattle rustling. The region, vast with rugged terrain, has been the epicentre of bandits and cattle rustlers (Marigat, 2023; Ombaka, 2015). The region is arid and semi-arid and is largely inhabited by pastoralists (Pkalya, Adan, & Masinde 2003). The proliferation of illicit Small Arms and Light Weapons (SALWs) has significantly contributed to the insecurity in the region often with fatal consequences. Law enforcement, in their attempt to combat insecurity in the regional hotspots have used disarmament to confiscate illegal firearms. This strategy has however failed to disrupt criminal networks and trajectories given that the state of insecurity has largely remained the same. This study explores the implications of the disarmament strategy on

spatio-temporal crime displacement. We examine why disarmament in this largely rural crime hotspot has failed to address the insecurity.

Disarmament as a strategy has traditionally been used globally to contain violent crime particularly in areas with high rates of firearm-related offenses. Across Latin America and the Caribbean, Villarreal (2016) has argued that disarmament while decreasing firearm related offences, had led to increase in knife attacks and robbery. Similar findings have been established by Burger (2018) in South Africa, Okoli (2021) in Nigeria, Williams (2020) in Somalia, Mkutu and Wandera (2016) in Uganda, and Kinyondo and Pelizzo (2018) in Tanzania. The findings highlight the adaptability of criminals, their ability to shift their criminal acts spatially and temporally to defeat crime prevention and control efforts.

Within the urban setups where majority of studies have advocated the success of hotspot policing strategies (Weisburd et al., 2017; Braga et al., 2019), crime displacement cannot entirely be dismissed. In Nairobi for instance, disarmament had been used to address urban violence in informal settlements, such as Kibera and Mathare. The Kenyan government implemented several firearm confiscations programs that led to a decline in firearm-related crimes in targeted areas. However, these efforts also resulted in spatial and tactical crime displacement. For example, a study by Mutahi and Ruteere (2019) found that disarmament in Kibera led to an increase in knife-related crimes and a shift in criminal activities to neighbouring areas, such as Embakasi and Ruai.

Similar disarmament efforts in the coast region of Kenya focused on addressing the activities of armed groups, such as the Mombasa Republican Council (MRC). The government implemented several voluntary disarmament programs, which reduced on the one hand firearm-related crimes in some areas. On the other hand, these efforts also led to spatial, temporal, and functional displacement, as armed groups turned to other forms of criminality, such as drug trafficking and piracy. A report by Kagwanja and Southall (2020) found that disarmament in Mombasa led to an increase in drug-related crimes, particularly in coastal towns of Malindi and Lamu.

We have established several gaps that this study seeks to fulfil. First, few studies have analysed disarmament from a criminological hotspot policing stand-up. We argue that this ought to be done if the strategy is used in crime control. Second, the existing findings on the implications of disarmament as a hotspot policing strategy are inconclusive at best (de Lima, 2024; Levin, 2015; Ralston, 2012; Rosenbaum, 2006). Third, this study focused on rural crime; a geographical scope that has not attracted much of criminological scholarship (Weisburd & Telep, 2014). Thus, this study will add on the necessary empirical research by establishing the implications of disarmament on spatio-temporal crime displacement in a rural banditry and cattle rustling-prone North-Rift Counties of Kenya.

THEORETICAL FRAMEWORK

This study was guided by two theoretical lenses; the geometric theory of crime (Brantingham and Brantingham (2017; 1998) and the theory of state society relations-strong societies and weak states (Migdal, 2018; 2001; 1988).

Geometric theory of crime posits that since crime occurs in space (spatial) and time (temporal); an analysing of the space (spatial) and time (temporal) is crucial to understanding the choices for crime and the displacement of crime. According to Brantingham and Brantingham (1998) the underpinning argument of the theory is that criminal events must be understood from the influence of the crime location and the time of occurrence. Wortley and Townsley (2016) add that this is essential as one must understand the confluence between offender-favourable spatial characteristics and the time distribution. Therefore, awareness and familiarity of space features and spatial elements such as nodes, pathways, and familiar edges by criminals ensures the survival of their illegal enterprise amidst intense hotspot policing strategies such as disarmament (Brantingham and Brantingham 2017) .

This theory is relevant in understanding the geographical and seasonal dynamics that characterise the North-Rift Counties of Kenya. Since the operational areas for these criminals have largely remained the same, they have demonstrated high degree of awareness of the location creating comfort and ease with the terrain, paths, hills, and gorges. As such, they can manoeuvre and sustain their criminogenic tendencies across the region and at different times.

The second theory that guided this study was the theory of state society relations; strong societies and weak states by Joel Migdal (2018; 2001; 1988). This theory explains the complex relationship between state and “traditional societies” in terms of influence and control. While the state has the total monopoly of power and control overall, within these rural communities, social control and fabric have been managed and controlled by social units. According to Migdal (2018; 2001), “while the role of the state in social control has been almost universally acknowledged in modern societies, states, especially in developing countries, are severely constrained by their domestic insecurity challenges thus undermining their efforts at re-ordering of society, especially those in rural areas”. From the outset, states in the developing world have exuded self-confidence in their “abilities” as fundamental movers of social change. Sharaby (2022) argues that persistent internal social conflicts and insecurity have brought into question the confidence the state and its agencies have in disrupting traditional conflict frontiers.

This theory is relevant in that it bring out how much strain the Kenyan government for several decades have gone through to address the crime and insecurity in the North-Rift Counties without real and concrete achievements in terms of lasting peace and security. While the state may be revered from its sheer complexity, capacities and capabilities, this reverence only enhances their global image. Internally, the government has struggled to contain the insecurity situation in the North-Rift for decades.

Integrating these two theories provide lens upon which the implications of disarmament, a hotspot policing strategy on crime displacement in the North-Rift Counties of Kenya is interpreted.

RESEARCH METHODOLOGY

This study employed a descriptive survey design approach to investigate the implications of disarmament on spatio-temporal crime displacement in North-Rift Counties of Kenya. The choice of the descriptive survey design is justified by its flexibility to permit the researchers to collect data in the natural rural setting of the respondents (Creswell & Creswell, 2023). Data were drawn from a sample of 384 primary respondents selected using a three multi-level sampling procedure. First, the study purposively selected Turkana, Baringo, and West Pokot counties and their respective worst hit sub-counties by the crime of banditry and cattle rustling and gazetted as hotspots. Second, the study randomly sampled two divisions within each selected subcounty. Third, proportionate sampling was used to distribute the sample population (384) across all the divisions. According to Krejcie and Morgan (1970) a sample of 384 subjects is a suitable representation for infinite populations such as the population of Turkana, Baringo, and West Pokot Counties. The respondents were selected randomly taking into consideration gender balance. Data was collected using structured questionnaires administered to primary respondents and Focus discussion guides administered on key informants after purposively selecting them. The qualitative data generated from the discussions augmented the questionnaire data. Table 1 below summarises the distribution of the sample population.

Proportionate sample population formula:

$$(n) = (N/N_t)n$$

Where;

n= sample size

N=Population per Division

N_t=Total Population

Table 1: Distribution of Sample Population per Divisions

County	Subcounty	Division	Population of Sampled Counties per Division (N)	Proportionate sample population (N/Nt)n
Turkana	Turkana South	Kainuk	6,024	10
		Katilu	22,878	37
		Total	28,902	47
	Turkana East	Lokori	4,388	7
		Lomelo	10,524	17
		Total	14,912	24
	Loima	Loima	13,338	22
		Turkwel	34,992	57
		Total	48,330	79
Baringo	Baringo North	Bartabwa	6,454	11
		Barwessa	13,771	23
		Total	20,225	34
	Baringo South	Mukutani	2,927	5
		Muchongoi	9,789	16
		Total	12,716	21
	Tiaty East	Churo	8,638	14
		Mondi	11,706	19
		Total	20,344	33
	Tiaty West	Nginyang'	7,517	12
		Kolowa	12,554	21
		Total	20,071	33
West Pokot	Pokot North	Alale	12,720	21
		Kiwawa	7,417	12
		Total	20,137	33
	Pokot Central	Sigor	31,379	51
		Chesegon	17,478	29
		Total	48,857	80
Total (Nt)			234,494	384

Source; KNBS, 2019

DATA ANALYSIS

This study generated both quantitative and qualitative data. Quantitative data was cleaned, coded, and analysed using descriptive and inferential statistics aided by the Statistical Package for Social Sciences (SPSS) version 28. Descriptive statistics was illustrated using median, mode, frequencies, and percentages while Chi-square was used to illustrate inferential statistics. Qualitative data was transcribed, scanned, sorted, organized, and coded before being analysed thematically to reveal patterns. This inferential, descriptive, and thematic analyses permits flexibility in describing patterns without being prescriptive.

STUDY FINDINGS

A total of 384 questionnaires were distributed to the sampled adults living in North-Rift Counties of Kenya. Out of the 384 questionnaires distributed, only 378 were returned giving a response rate of 98.44%. Primary

respondents were asked to reveal several descriptive socio-demographic characteristics including their gender, age, and other variables, as established in Table 2 along with the frequency and percentages. The results show a substantial representation of both genders (female 44.2, male 55.8); the age distribution was both diverse and inclusive; the education levels of the respondents was sufficient for purposes of general comprehension and understanding. This study included respondents of all varied marital statuses and employment.

Table 2: Socio-Demographic Data of the Primary Respondents

Variable	Category	Frequency	Percentage
Gender of the Primary Respondents	Male	211	55.8
	Female	167	44.2
	Total	378	100.0
Age in Years	Below 30 Years	74	19.6
	31-40 Years	82	21.7
	41-50 Years	140	37.0
	Above 51 Years	82	21.7
	Total	378	100.0
Highest Education Level	Primary	85	63.0
	Secondary	102	19.3
	College	137	10.1
	University	54	7.7
	Total	378	100.0
Marital Status	Married	238	63.0
	Single	73	19.3
	Divorced/Separated	38	10.1
	Windowed	29	7.7
	Total	378	100.0
Occupation of the Primary Respondents	Formal Employment	64	16.9
	Informal Employment	314	83.1
	Total	378	100.0

Implications of Disarmament on Spatial Crime Displacement

The study used chi-square to determine whether there was a relationship between disarmament and spatial crime displacement. The results are shown in Table 3.

Table 3: Inferential Analysis on Implications of Disarmament on Spatial Crime Displacement

	Inferential Tests			
		Value	df	Asymptotic Significance (2-sided)
Chi-Square Tests	Pearson Chi-Square	2180.705 ^a	210	.0001
	Likelihood Ratio	889.207	210	.0001
	Linear-by-Linear Association	217.088	1	.0001
Symmetric Measures	Contingency Coefficient	.923		.0001
	Cramer's V	.642		.0001
	Pearson's R	.759		.0001
	N of Valid Cases	378		

a. 228 cells (95.0%) have expected count less than 5. The minimum expected count is .02.

The categories under spatial crime displacement were conceptually related and thus merged accordingly. Chi square results $X^2(2) = 2180.705^a$, $p = 0.0001 < 0.05$ showed the relationship between disarmament and spatial crime displacement was statistically significant. Cramer's V value was $.642 > 0.50$ which denoted a very strong relationship between the variables. The Pearson's R obtained was ($r = .759$, $p = 0.0001 < 0.05$) implying that the two variables are positively and significantly correlated. This was confirmed by the Contingency Coefficient measure of Association (CC) which revealed that 92.3% of the total variance in spatial crime displacement could be attributed to disarmament.

This means that hotspot policing strategy of disarmament has led to criminals relocating their activities to areas with less stringent disarmament measures. This implies that hotspot policing remains an effective crime reduction strategy however it should be dispersed rather than concentrated to avoid crime displacement. According to Tregle et al., (2025) the geographic distribution of crime may change significantly due to disarmament policies especially if it is not paired with a sustained resource commitment. These findings also concur with the geometric theory of crime (Brantingham and Brantingham 2017). The Brantinghams argued that a criminals' mastery of the environmental nodes and pathways make their spatial crime displacement highly probable. In the North-Rift, the criminals have deep knowledge and awareness of their environment thus they easily spatially move their crime activities across the expansive region.

Descriptive analysis of responses on implications of disarmament on spatial crime displacement in North-Rift of Kenya was conducted using median, mode, frequencies, and percentages. This section presents the descriptive analysis of the responses. The results are presented in Table 4.

Table 4: Descriptive Statistics of Implications of Disarmament on Spatial Crime Displacement

Statement	No Extent (%)	Little Extent (%)	Moderate Extent (%)	Great Extent (%)	Very Great Extent (%)	N	Median	Mode
Disarmament in hotspot areas has led to an increase in crime in neighbouring regions.	2.4% (9)	—	2.4% (9)	70.1% (265)	25.1% (95)	378	4.00	4.00
Criminals have relocated their activities to areas with less stringent disarmament.	2.4% (9)	—	14.3% (54)	29.1% (110)	54.2% (205)	378	5.00	5.00
Spatial crime displacement is a direct consequence of disarmament in hotspot zones.	—	7.1% (27)	33.3% (126)	42.6% (161)	16.9% (64)	378	4.00	4.00
Disarmament has shifted crime from urban to rural/suburban areas.	19.8% (75)	48.9% (185)	14.3% (54)	9.5% (36)	7.4% (28)	378	2.00	2.00
Geographic crime distribution has changed significantly due to disarmament policies.	7.7% (29)	9.5% (36)	16.7% (63)	56.3% (213)	9.8% (37)	378	4.00	4.00
Crime hotspots have remained the same despite disarmament strategies	22.5% (85)	32.0% (121)	14.3% (54)	14.3% (54)	16.9% (64)	378	2.00	2.00

Source; Research Data, 2025

The study examined the implications of disarmament on spatial crime displacement in North-Rift Counties of Kenya by analysing respondents' perceptions across six key statements. The findings indicate statistically significant agreement with the assertion that disarmament efforts have influenced the geographic distribution of criminal activities, reflecting both the intended and unintended consequences of these strategies. The statement "Disarmament in hotspot areas has led to an increase in crime in neighbouring regions" recorded high agreement, with 70.1% ($n = 265$) of respondents indicating "great extent" and 25.1% ($n = 95$) reporting

"very great extent." A minority of 2.4% (n = 9) chose "no extent" or "moderate extent." The median and mode were both 4.00, suggesting strong consensus on the crime displacement effect from the disarmed to neighbouring areas.

Similarly, strong agreement was found with the statement "criminals have relocated their activities to areas with less stringent disarmament", where 54.2% (n = 205) selected "very great extent" and 29.1% (n = 110) chose "great extent." Only 2.4% (n = 9) reported "no extent," and the median and mode for this item were 5.00, indicating an even stronger consensus regarding criminal migration in response to disarmament. For the item "Spatial crime displacement is a direct consequence of disarmament in hotspot zones," the highest proportion of respondents selected "great extent" (42.6%, n = 161), followed by "Moderate Extent" (33.3%, n = 126), while a smaller share (7.1%, n = 27) indicated "little extent."

The median and mode remained at 4.00, reinforcing agreement on the spatial dynamics of crime as an outcome of targeted disarmament efforts. Contrastingly, the statement "Disarmament has shifted crime from urban to rural/suburban areas" elicited more divided responses. Nearly half (48.9%, n = 185) selected "little extent," and 19.8% (n = 75) chose "no extent." Only 16.9% combined indicated "great" or "very great extent." Both the median and mode for this item were 2.00, implying general disagreement with the notion that disarmament has led to an urban-to-rural crime shift. The assertion "geographic crime distribution has changed significantly due to disarmament policies" was positively received, with 56.3% (n = 213) selecting "great extent" and 9.8% (n = 37) indicating "very great extent." Combined, 66.1% affirmed this claim, while only 7.7% (n = 29) selected "no extent." The median and mode were 4.00, demonstrating overall agreement.

Lastly, the statement "crime hotspots have remained the same despite disarmament strategies" received a mixed reaction, with 32.0% (n = 121) indicating "little extent" and 22.5% (n = 85) reporting "no extent." Meanwhile, 31.2% reported either "great" or "very great extent." With a median and mode of 2.00, the results suggest general disagreement, indicating that crime hotspots have indeed shifted post-disarmament. The study underscores a prevalent perception among respondents that disarmament has led to notable spatial crime displacement, particularly from targeted hotspots to less policed areas. However, the extent of this displacement varies by context and geography, emphasizing the complexity of crime control through disarmament alone.

The results correspond with those of a study by Braga et al. (2019) who found that hotspot policing strategies, including disarmament, significantly reduced violent crime in high-risk areas but also caused spatial and temporal displacement in some cases. Moreover, as the geometric theory of crime assert, spatial crime displacement is probable if criminals are deeply aware of the space features in their environment such as edges, pathways, and activity joints. Bandits and cattle rustlers operating in the vast North Rift have mastered the ungoverned spaces, the difficult terrain, and enclaves that they use as hideouts from security dragnets (Musau, Ichani and Mulu, 2023; Osamba, 2000).

The quantitative findings were corroborated with the qualitative data collected from the Focus Group Discussions. One of the major discoveries was that crime is a socially organized activity where bandits lived and kept their livestock in social units called the "kraal". As Chief A described;

"...the kraal is at the heart of the crime of banditry and cattle rustling here. The kraal is like a typical village formation among those who have large herds of cattle. The kraal is heavily fortified. Each kraal can contain between 500 and 2000 firearms. When disarmament is underway, only old weapons are handed in. The new ones are retained within the kraal formation." (Chief A)

Moreover, disarmament in hotspot areas has produced crime increase in neighbouring regions. Criminals have relocated their activities to areas with less stringent disarmament measures and the displacement is a direct consequence of disarmament efforts in hotspot zones. According to village elder A, disarmament has led to spatial crime displacement.

“...disarmament of one kraal often means the criminals will definitely move to the other kraals. You know the kraals support each other. An attack on one is a threat to all of them and so they have to help their brothers who are fleeing disarmament and other acts of the security forces.” (Village elder A).

The geographic distribution of crime has changed significantly due to disarmament policies. Disarmament has shifted crime from urban areas to rural or suburban areas. This has also heightened fear among the neighbouring community. Chief C added that due to this strategy, crimes had spread in other places that were initially safe such as Kainuk, Kaptur, Kakong.

“...we never had a problem here until when government announced disarmament in Marakwet. Then the bandits moved here to flair things for us here in Kainuk. Kainuk now is a hotspot. Have you not seen the camps? We have KDF camp, ASTU camp, and GSU camp. This place is the epicentre now. I suspect because of the security agencies response; the bandits will move to Laikipia.”(Chief C)

According to Assistant chief A the borders are so porous so it remains a challenge to comprehensively conduct disarmament. The intercommunal borders are weak so are the international border of Kenya with Uganda, South Sudan, Ethiopia.

“...when you tell one kraal to submit arms, they move the good arms to their other neighbouring kraals that are not a target for disarmament. They simply surrender old useless arms. You know the kraals are strategically located. The distance between one and another is about 5Kms. The porous border is also a problem at the far north of Turkana. Many times, the Merille cross to Todonyang’ and drive away livestock to Ethiopia. The problem was also persistent with the Toposa crossing from South Sudan but this has gone down.” (Chief A)

Due to hostile neighbourhood and uncooperating members of the community some police are killed and this creates fear among the security agencies. According to the Assistant County Commissioner, there is a challenge since during disarmament curfew, the criminals change to be soft and good people temporarily during the security operation then they emerge later and displace the locals taking their property and displacing the people.

“...you know, these criminals are just locals, they blend with the locals and turn against non-locals when the security operations are complete. Again, the criminals are always welcome among their own kind who maybe staying elsewhere during disarmament operations” (Assistant County Commissioner, West Pokot)

According to chief B, crime hotspots have generally remained the same despite disarmament strategies being implemented. He also added that disarmament faces the challenge of inaccessibility of some places.

“...let me tell you, there has been no significant change here. The bandit hotspots in Baringo, West Pokot, Turkana, Samburu, Marakwet, Laikipia have remained the same. These criminals build kraals in inaccessible places where they keep livestock. The kraals are heavily fortified with rings of morans around them. This terrain is hard, hilly, forested, infested with wildlife. Police do not go deep. Perhaps the security agencies need to blast at the heart of the kraals but women, children, and the livestock will die.” (Chief B)

Chief A added that total disarmament has been done under previous regimes but with little success and spatial displacement still occurred.

“...you remember the 1979 disarmament under the Tegla Lorupe and 1984. These were the major disarmaments that would have had total shut down on crime in West Pokot region. The problems persist to date. What we need is total commitment to expose the people to alternative livelihoods in addition to cattle. Why can’t we do it like the Uganda government did. They also had a problem with the among the Karamoja clan. Since creating a ministry exclusively in charge of Karamoja affairs, they have not had much insecurity. It works for them.” (Chief A)

These sentiments suggest the need to localize solutions especially if we have to breakdown traditional rural conflict zones. Migdal (2021) in his theory of state society relations argues that instead of seeking to confront the values and beliefs that are the irreducible non-negotiable principles upon which the institutions of the community (such as cultural, religious, economic, and political) are founded, recognition of such values coupled with concerted efforts towards education and development may provide a sustainable solution and thus avoid crime displacement and incessant conflict.

Implications of Disarmament on Temporal Crime Displacement

The study used chi-square to determine whether there was relationship between the disarmament and temporal crime displacement. The results are shown in Table 5 below.

Table 5: Inferential Analysis on Implications of Disarmament on Temporal Crime Displacement

Inferential Tests				
		Value	df	Asymptotic Significance (2-sided)
Chi-Square Tests	Pearson Chi-Square	2385.546 ^a	180	.0001
	Likelihood Ratio	1049.883	180	.0001
	Linear-by-Linear Association	308.995	1	.0001
Symmetric Measures	Cramer's V	.725		.0001
	Contingency Coefficient	.929		.0001
	Pearson's R	.905		.0001 ^c
	N of Valid Cases	378		

a. 190 cells (91.3%) have expected count less than 5. The minimum expected count is .07.

Since the categories were conceptually related, they were merged during analysis. Chi square results $X^2(2) = 2385.546^a$, $p = 0.0001 < 0.05$ showed the relationship between disarmament and temporal crime displacement was statistically significant. Cramer's V value was $.725 > 0.50$ which denoted a very strong relationship between the variables. The Pearson's R obtained was ($r = .905$, $p = 0.0001 < 0.05$) implying that the two variables are positively and significantly correlated. This was confirmed by the Contingency Coefficient measure of Association (CC) which revealed that 92.9% of the total variance in temporal crime displacement could be attributed to disarmament. This means that hotspot policing strategy of disarmament has caused criminals to change the timing of their activities or the criminals have adapted by committing crimes during times when police hotspot policing strategies are relaxed. This implies that hotspot policing remains an effective crime reduction strategy however it should be dispersed rather than concentrated to avoid crime displacement. According to Carvalho and Guerra (2025) the hotspot policing strategies may cause criminals to change the timing of their activities e.g., from daytime to night-time.

Descriptive analysis of responses on implications of disarmament on temporal crime displacement in North-Rift of Kenya was also conducted using median, mode, frequencies, and percentages. The results are presented in Table 6.

Table 6: Descriptive Statistics of Implications of Disarmament on Temporal Crime Displacement

Statement	No Extent (%)	Little Extent (%)	Moderate Extent (%)	Great Extent (%)	Very Great Extent (%)	N	Median	Mode
Disarmament has caused criminals to change the timing of their activities (e.g., day to night)	—	—	2.4% (9)	43.9% (166)	53.7% (203)	378	5.00	5.00
Crime rates have increased during periods when disarmament enforcement is relaxed	—	2.6% (10)	9.5% (36)	13.0% (49)	74.9% (283)	378	5.00	5.00

Temporal displacement of crime is a noticeable outcome of disarmament strategies	—	2.4% (9)	21.4% (81)	43.9% (166)	32.3% (122)	378	4.00	4.00
Criminals have adapted by committing crimes when police presence is reduced	2.4% (9)	—	9.5% (36)	24.1% (91)	64.0% (242)	378	5.00	5.00
Disarmament has led to a shift in the frequency of criminal activities over time	2.4% (9)	2.4% (9)	14.6% (55)	44.2% (167)	36.5% (138)	378	4.00	4.00
Crime times have generally remained unchanged despite disarmament strategies	24.6% (93)	41.5% (157)	12.4% (47)	11.9% (45)	9.5% (36)	378	2.00	2.00

The study examined perceptions of temporal displacement of crime following disarmament efforts in the North Rift counties of Kenya. Results indicated that majority of respondents agreed that disarmament has caused criminals to change the timing of their activities, shifting from daytime to night-time, with 53.7% indicating this to a very great extent and 43.9% to a great extent (Median = 5, Mode = 5). Similarly, 74.9% of respondents perceived that crime rates increased during periods when disarmament enforcement was relaxed, reflecting strong agreement on temporal crime fluctuations (Median = 5, Mode = 5). Temporal displacement was widely recognized as a noticeable outcome of disarmament strategies, with 43.9% and 32.3% of participants rating this to a great and very great extent, respectively (Median = 4, Mode = 4). Additionally, 64.0% believed criminals adapted by committing crimes during times of reduced police presence, supported by a median and mode of 5. Shifts in the frequency of criminal activities over time were also reported, with 44.2% indicating a great extent and 36.5% a very great extent (Median = 4, Mode = 4).

Conversely, 66.1% of respondents felt that crime times generally remained unchanged despite disarmament efforts, with 24.6% indicating no extent and 41.5% little extent, reflected in a lower median and mode of 2. These findings highlight nuanced views on how disarmament influences the temporal patterns of criminal behaviour.

The results correspond with Weisburd and Telep (2014) who argued that disarmament causes the temporal displacement of crime. Therefore, criminals may relocate to places that have not received intense law enforcement intervention as their initial location. Guerette (2016) adds that criminals were likely to displace spatially and temporally whenever the crime opportunity continued to exist and as long as their familiarity with the area remained. These scholars and the findings of this thesis concur with the geometric theory of crime and the theory of state society relations; strong societies and weak states. Examining the role of place, Brantingham and Brantingham (2017) assert that criminals who have mastered the map; who have clear knowledge and experience in nodes, hills, valleys, gorges, and other features, are highly likely to displace their crime acts. Similarly, Migdal (2018) acknowledged the “ever diminishing” role of the state in disrupting traditional crime opportunities especially in rural places.

On the question on implication of disarmament on temporal crime displacement, there were several qualitative responses. According to Chief B, disarmament led to temporal crime displacement. Criminals tend to change the time they commit crimes for example from day time to night time. According to a business community leader A, due to disarmament, these criminals have started committing crimes when police presence is reduced and this has led to a shift in the frequency of their activities.

“...criminals change their operational time. They avoid times when security operations are intense. You know you simply cannot face the police. The use guerrilla warfare. Attack the police when they least expect it and run back into hiding in the bush.” (Business Community Leader, Loima)

According to the ward commander B, criminals are able to maintain their illicit acts since they always have more knowledge about the surrounding terrain and in all seasons as compared to the officers and at times, they kill officers who understand the terrain. Some officers who carry out the disarmament lack awareness of the local landscape and hide outs are unable to keep up with such criminals.

“...these criminals operate day and night. When you target them during the day, they shift to the night. Most police officers sent to carry out disarmament cannot operate at night. This because we fear for our lives as well. We can be, and have in the past been targeted by these bandits. The outcome has been fatal for us. Also, at night, the woods and shrubs are dangerous and with poor geographical know-how, we have to stay out. I think the bandits know this. The disarmament only affects their day activities which they shift to night.” (Ward Commander B)

Chief C added that bandits had also set up traps in the forests to challenge the disarmament strategy.

“...there are parts of the jungle that police wouldn’t dare go no matter the time or day. The real kraals are so fortified by the bandits such that an attack on them especially at night, would be fatal.” (Chief C)

Most community members were quite hesitant and sometimes sceptical of security officers during security operations such as disarmament. According to Assistant County Commissioner B, during disarmament, officers lacked basic things like food and water especially when they run out of their sources. Locals were hesitant to share these either because of the shortage in general or the fear of being branded as siding with the “enemy.”

“...during disarmament, police officers are often negatively perceived by locals. The level of cooperation and support even with basic supplies like water and food when they run out is not provided. The people fear that retaliation by bandits might befall them especially if they assist the police. The locals are often hesitant to assist deliberately, out of fear, or sometimes because of genuine lack or shortages.” (Assistant County Commissioner B)

According to a member of the county assembly A, disarmament leads to temporal crime displacement since there is lack of enough resources to ensure effective enforcement and sustenance of the strategy.

“...if you only enforce disarmament during the day, obviously, the criminals will roam with real weapons at night after depositing the old deposited weapons with the police. Police also cannot operate 24/7 for weeks and months. They will grow weary, relax and criminals who always have endurance will continue to survive.” (Member of County Assembly A)

According to Assistant Chief B, the number of crimes reported in the area after hotspot policing intervention such as disarmament has remained the same only the time of commission has changed.

“...these bandits simply change time. The crime of rustling cattle and banditry is the constant year-round.” (Assistant Chief B)

The inability of the disarmament strategy to comprehensively disrupt crime in the North-Rift Counties of Kenya reaffirm Joel Migdal’s assertions that the state, while exuding confidence in their ability and capacities in fighting crime from an external point of view, internally, they continue to struggle to contain traditional rural crime and conflict frontiers (Migdal, 2018). The disruption of such traditional crime hotspots may require much more than the disarmament strategy in general.

CONCLUSION AND RECOMMENDATIONS

The purpose of the study was to explore the implications of disarmament on spatio-temporal crime displacement in North-Rift Counties of Kenya. This objective established that disarmament caused spatio-temporal crime displacement. Due to disarmament, crime perpetrators find other places and other times to continue committing crimes. Disarmament led to changes in both time of commission (temporal crime displacement), and changes of place (spatial crime displacement). The crimes continued to exist despite employing the disarmament strategy in the rural hotspot areas of Turkana, Baringo, and West Pokot. The study indicated that the disarmament process faced challenges such as hostile community members, inadequate knowledge on the terrain by the security agencies, and language barrier. The inferential test results determined

that there was an association between disarmament and spatio-temporal crime displacement. Therefore, disarmament is a good predictor of spatio-temporal crime displacement in rural hotspot areas.

In conclusion, this research paper has analysed the implications of disarmament on spatio-temporal crime displacement in North-Rift Counties of Kenya. We have argued that by using disarmament as the sole hotspot policing strategy, spatio-temporal crime displacement is highly likely. Understanding the implications of disarmament particularly on police legitimacy and perceptions that arise from the public is essential if the strategy should achieve crime reduction and control without displacement. Although these findings extend hotspot policing research in rural parts of developing countries, they cannot be generalized to the entire hotspot policing and crime displacement phenomena across the entire Kenya, especially, urban places.

The study recommends the dispersed enforcement of disarmament across the crime hotspots. This way, the bandits and cattle rustlers operating in the regions would be encircled and illegal arms aiding their crime can be confiscated. Moreover, integrating other policing strategies such as community-led policing, and intelligence-led policing would assist focus law enforcement efforts in problem areas without causing unintended disruptions to residents.

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