

Effects of Dusk-to-Dawn Curfews on Spatio-Temporal Crime Displacement in North-Rift Counties of Kenya

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ABSTRACT

The use of dusk-to-dawn curfew to contain insecurity in the bandit-prone North-Rift Counties of Kenya has been a common and preferred hotspot policing strategy by law enforcement, yet its outcome has been moderate at best. The study utilized the geometric theory of crime and the theory of state society relations. This study used both quantitative and qualitative research methods. A three-level sampling procedure was used to select the respondents. First, purposive sampling was used to select the counties worst hit by crime and gazetted as hotspots based on legal notices no. 9, 10, 11, and 12 of 2023 and their subsequent extensions vide legal notices no. 167, 168, and 169. These counties were Turkana, Baringo, and West Pokot. Second, two divisions of within each county were randomly selected. Third, proportionate sampling was utilized 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 inferential, descriptive, and thematic analyses. The study established significant association between dusk-to-dawn curfew and spatial crime displacement; $\chi^2(140, N = 378) = 1839.638^a$, $p = .0001$, Cramér's $V = .698$, and temporal crime displacement; $\chi^2(120, N = 378) = 1195.452^a$, $p = .0001$, Cramér's $V = .562$. In conclusion, curfew displaced rather than reduced crime, indicating the need for comprehensive security strategies. The study recommends to law enforcement and policing experts an integrated policing system that incorporates community-led policing initiatives together with hotspot policing strategies such as dusk-to-dawn curfew to minimise crime displacement.

KEYWORDS: Banditry and cattle rustling, Dusk-to-Dawn curfew, Hotspot policing, Rural, Kenya, Spatio-temporal crime displacement.

1. INTRODUCTION

In this article, we put forward the argument that the persistent crime of banditry and cattle rustling in the North-Rift Counties of Kenya is partially because criminals have been able to displace their criminality spatially and temporally following the enforcement of hotspot policing strategies such as dusk-to-dawn curfew. The fragility of the North-Rift Counties of Kenya has been acknowledged with insecurity running for several decades (Amutabi, Henry and Bore 2025). While acknowledging the environmental constraints in the regions, the fact is that the crimes have metamorphosed into incessant deadly attacks and confrontations with security agencies that seem to emerge in parts of the region less expected and at times least expected.

Dusk-to-dawn curfew, as a hotspot policing strategy, has not significantly controlled the crime in these rural places unlike the cases often pointed out in urban areas. Hotspot policing strategies have been successfully implemented in urban centres to contain and combat organized crime, terrorism, and intercommunal violence with minimal success (less crime displacement). While dusk-to-dawn curfews have yielded short-term reductions in crime, challenges such as police corruption, resource constraints, and community mistrust have limited their effectiveness (Brogden & Nijhar,

2005). Similarly, attempts to enforce dusk-to-dawn curfew in rural Nigeria to combat Boko Haram insurgency in the northeast led to the displacement of insurgent activities to neighbouring countries like Cameroon and Niger (Onuoha, 2014).

The North-Rift Counties of Kenya, encompassing Turkana, Baringo, and West Pokot counties, have been a hotspot for intercommunal violence, cattle rustling, and resource-based conflicts. The proliferation of small arms and light weapons (SALWs), coupled with weak governance structures, has exacerbated insecurity in the region (Alusa & Kanyinga, 2016). Dusk-to-dawn curfew efforts have been implemented to reduce armed violence, but these initiatives have highly likely led to the displacement of criminal activities to neighbouring regions or the emergence of alternative forms of crime, such as illegal arms trade and banditry (Mwangi, 2012). The question that guides this article is “ does dusk-to-dawn curfew as a hotspot policing strategy produce crime displacement in rural North-Rift Counties of Kenya? ”

2. LITERATURE REVIEW

Dusk-to-dawn curfews as a strategy to control crime has been in used in most states around the world. Research on this strategy has concentrated, usually in the short-term, on the immediate successful dissipation of the crime (Pia et al., 2023; Chazkel, 2020;) while used in urban or sub-urban areas. Few studies have analysed in-depth the long-term effects of the dusk-to-dawn strategy on crime displacement in urban, sub-urban or even in rural neighbourhoods (Bedoya et al., 2023). There is a general lack of Criminology scholarships on the dusk-to-dawn strategy as a hotspot policing strategy and its potential effects on crime displacement despite persistent implementation.

Our article addresses the above empirical deficits. We advance crime research on hotspot policing and crime displacement by focusing on one of the most used yet least studied strategy by seeking to establish its long-term effects in rural bandit and cattle rustling-prone North-Rift Counties of Kenya. A curfew policy once declared should effectively limit movement in or out of the area of coverage and within the specified duration with exceptions where necessary. This restriction seeks to cripple criminal activity at the place and time and thus improve security. This, however, is less likely the case for the North-Rift counties of Kenya. As Sprengholz et al., (2021) has argued, “ curfews may have unintended consequences such as eliciting reactionary tactics, usually malign, motivating people (including criminals) to violate the curfew or shift their activities to other times not covered by the curfew.

Globally, dusk-to-dawn curfew as a hotspot policing strategy has been implemented as part of gang suppression strategies to reduce instances of gang violence. Studies have shown that while dusk-to-dawn curfews are effective, their crime control is short-lived and the risk of temporal crime displacement exists. For instance, Ratcliffe (2017) established that dusk-to-dawn curfews, although an essential temporal restraint, fails to address the fundamental crime opportunity concept. Provided crime opportunities exist, Ratcliffe argues, crime displacement is possible even beyond curfew restrictions. Moreover, to contain unrest that had engulfed the city of Houston in the USA, following a storm, a curfew was imposed to restore order. While the curfew was effective in controlling the violence in the city, there was significant functional and temporal displacement by criminals (Haag, 2017).

Across Latin America, dusk-to-dawn hotspot strategy have been implemented in many countries but with mixed results. While dusk-to-dawn curfews reduced street violence, property crime and crimes against persons significantly increased (Miller, 2016; Pina, 2007). This shows how criminals were able to displace their crime to different targets (target displacement), and different crime types (functional displacement). Similarly, dusk-to-dawn curfew failed to contain surge of crime, and crime displacement across drug-prone cities in most Caribbean and South American cities (Welch et al., 2024). Importantly however, instances of abuse of the curfew by state officials have equally been documented where human rights violations have been perpetrated upon declaration of the dusk-to-dawn curfews (Gonzalez-Perez, 2013).

In Africa, dusk-to-dawn has been implemented in various countries, often in urban places just as in most of the Americas and Europe, to contain gang violence and organised criminal groups. In Nigeria, the Islamic sectarian movement *Boko Haram* has wedged a religious and idealised war in the northern parts of the country prompting the

state to impose the dusk-to-dawn curfew in much of the territories in the north. Nonetheless, the criminal group has often displaced their violent activities to vulnerable groups such as school children, the women and elderly (Akinseye et al., 2024). The dusk-to-dawn curfew while lauded by some across Nigeria, its target crime displacement is hard to ignore.

The displacement of violence and crime by *Boko Haram* often goes beyond Nigeria into other neighbouring states such as Chad, Niger, and Cameroon. This way, *Boko Haram* integrates with other insurgent groups operating in the larger *Sahel* region, thus they are able to wage more violence and crime. These criminal drifts have thus rendered dusk-to-dawn hotspot strategy ineffective in protecting targeted civilians and their property (Akinseye et al., 2024; Olowojolu and Ettang, 2021). Meanwhile, the crime rates across most countries within the *Sahel* region has remained high. For instance, Fellmeth (2022) has argued that the dusk-to-dawn curfew has not deterred banditry and other crimes that have ravaged the country for decades because of spatial, temporal and target crime displacement.

The South African government has been grappling with the problems of vigilantism, black segregation, and apartheid. Efforts to contain widespread violence and crime have included to imposition of dusk-to-dawn curfew across several cities (Cupido, 2021). While these efforts have led to decrease of cases of street violence, the criminals have shifted to interpersonal crimes such as murder of their victims. As Yesufu (2022) points out, there have been significant increase of homicide against foreign nationals in South Africa. The shifts have also incorporated new techniques of committing crimes against person and property crime (tactical displacement) in ways that are less detectible.

Dusk-to-dawn curfew has been implemented in the democratic republic of Congo to contain widespread violence and wanton looting of government and private property in eastern DRC. Armed militia have wrecked peace and security efforts in South Kivu, North Kivu, and parts of Goma (Van der Bracht et al., 2017). The armed criminal groups have however shifted their crime targets to innocent civilians who have been attacked, assaulted, and killed as the militias wage war against government forces, UN peacekeepers and other armed groups, in quest for territory and control (Akoeda, 2024). In the end, the criminals have been able to survive despite the dusk-to-dawn policing strategy.

Within East African states, dusk-to-dawn curfew have been implemented to contain rising crime in urban neighbourhoods and to control violence and gang activities. In Ethiopia, dusk-to-dawn curfew was imposed in the northern province of Tigray to restore law and order following the emergence of insurgencies in the region (Wall, 2022). What followed however was pillage of vulnerable groups such as the sick, schools, and civilians (target displacement). Moreover, the Ethiopian government had imposed dusk-to-dawn curfew to control the destruction of major government infrastructure projects. While this strategy controlled the widespread violence in the capital Addis Ababa, it spatially displaced crime to other regions such as Amhara, Tigray, Oromia, Benishangul-Gumuz, and Afar (Mengistu, 2015).

Dusk-to-dawn curfew in Somalia has been imposed to contain the insecurity threats by Al-Shabaab. The curfew has been enforced in parts of the capital, Mogadishu, Haradhere, and Bardere to restore security following attacks by Al-Shabaab (Dosmo, 2024). However, the efforts to contain the activities of Al-Shabaab by state authorities and African Union Mission in Somalia (AMISOM) have produced displacement of their criminal and terror activities. For example, the militant group targeted government installations, foreign nationals, and vulnerable populations (target displacement). Overall, the dusk-to-dawn curfews have displaced the crime and terror activities to less guarded targets.

In Kenya, dusk-to-dawn curfew hotspot strategy has been implemented to address insecurity in Tana Delta, Lamu, and in north-rift counties of Baringo, Samburu, West Pokot, Turkana, Laikipia, and Elgeyo Marakwet. In Lamu, to contain incidences of criminal attacks that have led to the loss of lives, kidnappings, and damage to property by alleged separatist group, the Mombasa republican Council (MRC) (Kithinji, 2024). In Tana Delta, dusk-to-dawn curfew was imposed to contain the killing between the Orma and the Pokomo tribes, yet the destruction and violence continued (Kagira, 2012). The curfew was largely ineffective as residents of Tana River continued to experience violence, crime, and property destruction (Shaiye, 2013).

In the Rift Valley regions, dusk-to-dawn curfew have been implemented to control banditry and cattle rustling but with minimal success. As Chepyegon (2023) avers, in Baringo, the dusk-to-dawn curfew has led to shift of cattle rustlers to neighbouring West Pokot and Turkana counties. Cattle rustling continue to persist as the criminals, being well-versed with the region, have spatially and temporally displaced their crimes in the neighbouring areas. Marigat and Cheruiyotomo (2022) add that the crimes of banditry and cattle rustling has instead metamorphosed into an organized form throughout the north-rift counties, where criminals now use sophisticated weaponry despite dusk-to-dawn curfews and other hotspot policing strategies being implemented.

3. THEORETICAL FRAMEWORK

The research was guided by geometric theory of crime and the theory of state society relations; strong societies and weak states. Geometric theory of crime was first proposed by Brantingham and Brantingham (1998). According to the duo, the distribution of crime within time and space and the confluence between offenders and their targets at a particular location must be understood by analysing the environment itself. Andresen (2010) adds that criminal events must be understood from the influence of the crime location and the time of occurrence, that is, the spatio-temporal factors. The shift of crime locations (spatial crime displacement) and time of crime (temporal crime displacement) is highly likely when the criminals continue to exhibit familiarity with the new locations and times.

In a rural setup such as the vast North-Rift Counties of Kenya, criminals have been able to demonstrate awareness of the areas overtime due to spatial familiarity with features such as terrains, paths, gorges, valleys, and hills. Brantingham and Brantingham (2017) forewarn that such high level of geographical awareness of a vast rural territory is highly likely to lead to crime displacement. This theory is particularly essential in this study as it mixes space and time which are critical components of crime displacement. However, the theory falls short in its attempt to explain the dynamics within crime hotspots that could make displacement of crime probable.

The theory of state society relations; strong societies and weak states explores the social dynamics that characterize crime hotspots. This theory was first suggested by Joel Migdal. According to Migdal (2018), “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.” That is, the state while generally acknowledged as the strong enforcer of social control by external players, internally, it continues to struggle to contain criminal groups such as bandits, cattle rustlers, and other forms of dissidents within it.

The influence of the social state has remained largely unchanged more so in remote and rural communities. Migdal (2018) has posited that despite tremendous advancements that have been made economically, politically, and socially, fewer developing countries have fully succeeded in integrating their populations seamlessly into the so-called modernity. Part of the challenge Migdal argues, is the social fragmentation of societies into tribes, ethnicities, and religious groupings. As Puntigliano (2017) adds, embedded at the centre of rural communities are the components of values and beliefs, institutions, and the elite. The social values of the rural communities have remained “pure” as they traditionally were; deeply rooted in a strong belief system.

Migdal (2021) argues that the values and beliefs become the irreducible non-negotiable principles upon which the institutions of the community (such as cultural, religious, economic, and political) are founded. The institutions only express the order that originates from the core values while the elite exist and act only on the core value system. In short, the elite is inextricably linked to the core. This web-like communities function nationally and at the local levels, but none is willing to lose their influence in their areas of control. While the state may be revered from its sheer complexity, capacities and capabilities, this reverence only enhances their global image.

Within the North-Rift counties, the rural communities have exhibited an inextricable web of connectedness, strong value systems, and strong social control. Attempts by the state to exercise control over the region have been met with more violence and crime. Among the communities that inhabit Turkana, Baringo, and West Pokot, the state has been

significantly strained in their pursuit for enduring peace and security. The social control exercised by inhabitants in the regions have persistently demonstrated strength over and above state-initiated security operations. This theory explains the social dynamics that are at play in the North-Rift regions that have led to the sustenance of crime and conflict.

4. RESEARCH METHODOLOGY

This study draws upon a larger mixed study which explored the effects of hotspot policing strategies on crime displacement in the North-Rift Counties of Kenya. This study employed a descriptive survey design. As Creswell and Creswell (2023) point out, a descriptive design is a method in which the researcher stays close to the data and uses minimal frameworks for interpretation of the data gathered other than descriptive themes and statistics while also collecting data in the natural setting of the respondents. The study areas were Turkana, Baringo, and West Pokot counties. These North-Rift Counties have been the epicentre of the crimes of cattle rustling and banditry. These counties were purposively selected because they were worst hit by crimes of banditry and cattle rustling and gazetted as hotspots. The study randomly sampled two divisions within each selected County. According to Krejcie and Morgan (1970), a sample of 384 subjects is adequate to represent an infinite population. Proportionate sampling was used to distribute the sample population (384) across all the divisions. The respondents were randomly selected taking into consideration gender balance. The distribution of the sample population is illustrated in Table 1 below:

Table 1: Distribution of Sample Population

County	Subcounty	Division	Population of Sampled Counties per Division	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	234,494	384
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Source; KNBS, 2019

5. DATA ANALYSIS

Data was collected using structured questionnaires and focus group discussion guides. The focus groups aimed to generate accounts of the experiences of the respondents with the dusk-to-dawn curfew strategy. Focus group discussions were then held in each division. A total of Eighteen focus group discussions were held. Respondents who took part in the focus group discussions were purposively selected and constituted the area chiefs, subchiefs, the village elders, the ward commander, the Assistant County Commissioner (ACC), the Member of the County Assembly (MCA), and a member of the business community. Each focus group discussion had between Five and Eight participants. The participants in focus group discussion were individuals with administrative, political and business responsibilities at the divisional level. The study collected both quantitative and qualitative data and thus, quantitative, and qualitative data analysis was applied in this study. Quantitative data was coded, cleaned, and checked for completeness before analysis. The datasets were coded and analysed using descriptive and inferential statistics aided by the Statistical Package for Social Science (SPSS) version 28. Descriptive statistics utilized were median, mode, frequencies, and percentages. The primary inferential statistics to be used was Chi-square. Qualitative data was be transcribed, scanned, sorted, organized, and coded before being analysed thematically.

6. RESEARCH FINDINGS AND DISCUSSION

This section provides an overview of the study findings. The findings have been presented orderly beginning with demographic characteristics. Findings and discussion on the effects of dusk-to-dawn curfew on spatial and temporal crime displacement is then presented.

Demographic Characteristics of the Respondents

The study sought to determine the demographic general information factors of the respondents in terms of their gender, age, highest education level, marital status, and occupation of the primary respondents. The subsequent sections present the research bio-data of the respondents and their general information.

Response Rate

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% (Figure 3). This response rate was considered adequate because according to Javali and Javali (2024) a response rate of 70% is adequate for a sampled population.

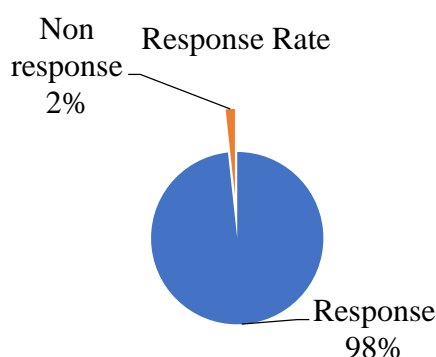


Figure 1: Response Rate

Figure 3 indicates that the study obtained a response rate of 98.44%. This response rate is higher than that obtained in recent studies conducted in North-Rift counties of Kenya by Makokha et al., (2024); Amutabi et al., (2025) and Tawane (2025). The high response rate in this study was credited to the logistical preparations made before data and the social acceptance of the data collection assistants by the respondents.

Gender of the Respondents

The distribution by gender of the respondents was established by the study. This was meant to determine the distribution of the sample across gender. This was also meant to show that the results were representative of both genders. The results determined that 55.8% of the respondents were male while 44.2% were female. Table 2 below summarises the gender of the respondents.

Table 2: Gender of the Respondents

Gender of the Respondents	Frequency	Percentage
Male	211	55.8
Female	167	44.2
Total	378	100.0

Age of the Respondents

The results further showed that majority (37.0%) of the respondents were between the ages of 41-50 years. Those above 51 years were (21.7%), between ages 31-40 were 21.7% and those below 30 years were 19.6%. This implies that most of respondents were between ages 31 to above 51 years, that is, 80.4%. Therefore, they were able to appreciate and understand the effects of hotspot policing strategies on crime displacement in North-Rift of Kenya. These results thus reveal that the respondents were old enough and are thus were conversant with hotspot policing strategies and crime displacement; they have an experienced view of their surrounding circumstances. Moreover, the results were distributed across all ages. Therefore, these findings were diverse and inclusive of all ages. Table 3 below summarises the findings on age.

Table 3: Age of the Respondents

Age in Years	Frequency	Percentage
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

Education Level of the Respondents

The results also showed that 75.8% of the respondents had below college level education (primary 48.9%; Secondary 26.9%). Those with college level education constituted 14.4% while only 9.8% had University level education. There was generally low levels of education among the respondents. This reflected the level of education across the study areas and thus a high likelihood to resort to crime as their main alternative source of livelihood. Similar findings were established by Kapoyon (2019) and Kareithi (2015) who pointed out that educational challenges significantly limited opportunities avenues thus may incline the residents of North-Rift to perpetual state of crime. Table 4 below summarises the findings on levels of education of the respondents.

Table 4: Education Level of the Respondents

Education Level	Frequency	Percentage
Primary	185	48.9
Secondary	102	26.9
College	54	14.4
University	37	9.8
Total	378	100.0

Marital Status of the Respondents

The results show that 63% of the respondents were married, 19.3% were single, 10.1% were divorced/separated while 7.7 percent were widowed. Marital status plays a valuable role in shaping views and perceptions of individuals particularly when considering strategies that affect them such as hot-spot policing strategies. Moreover, while the impact of crime and hotspot strategies affected all residents, family units with children bore the greatest burden since both criminals and security agencies' actions may engineer distress and displacement. This observation and finding concur with Riallem (2018) who pointed out that families are greatly affected during disarmament operations and by criminal activities across the North-Rift. Table 5 summarises the findings on marital status of the respondents.

Table 5: Marital Status of the Respondents

Marital Status	Frequency	Percentage
Married	238	63.0
Single	73	19.3
Divorced/Separated	38	10.1
Windowed	29	7.7
Total	378	100.0

Occupation of the Respondents

The results show that 83.1% of the respondents were in informal employed while 16.9% were in formal employment. Since majority of the respondents are informally engaged in work, their flexibility, and levels of attrition to other informal jobs or even crime is highly likely. Ekitela & Odera (2021) argued that flexibility and the high level of informal engagement and unemployment contributes to the emergence of the use of *boda-boda* by criminals and by locals across the country. The informality creates a duality in which a clear distinction between the informal, the unemployed, and the criminal is almost impossible to establish. Table 6 summarises the findings on occupation of the respondents.

Table 6: Occupation of the Primary Respondents

Occupation	Frequency	Percentage
Formal Employment	64	16.9
Informal Employment	314	83.1
Total	378	100.0

Findings on the Effects of Dusk-to-Dawn Curfew on Spatial Crime Displacement

The study used chi-square to determine whether there was relationship between the dusk-to-dawn and spatial crime displacement. The results are shown in Table 7.

Table 7: Inferential Analysis of the Effects of Dusk-to-Dawn Curfew on Spatial Crime Displacement

Inferential Tests		Value	df	Asymptotic Significance (2-sided)
Chi-Square Tests	Pearson Chi-Square	1839.638 ^a	140	.0001
	Likelihood Ratio	755.694	140	.0001
	Linear-by-Linear Association	208.611	1	.0001
Symmetric Measures	Cramer's V	.698		.0001
	Contingency Coefficient	.911		.0001
	Pearson's R	.744		.0001 ^c
	N of Valid Cases	378		

a. 145 cells (87.9%) have expected count less than 5. The minimum expected count is .00.

Chi square results $X^2(2) = 1839.638^a$, $p = 0.0001 < 0.05$ showed the relationship between dusk-to-dawn curfew and spatial crime displacement was statistically significant. Cramer's V value was $.698 > 0.50$ which denoted a very strong relationship between the variables. The Pearson's R obtained was ($r = .744$, $p = 0.0001 < 0.05$) implying that the two variables are positively and significantly correlated. This was confirmed by the Contingency Coefficient measure of Association (CC) which revealed that 91.1% of the total variance in spatial crime displacement could be attributed to dusk-to-dawn curfew.

This means that hotspot policing strategy of dusk-to-dawn curfew 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 spatial crime displacement. According to Tregle et al., (2025) the geographic distribution of crime may change significantly due to the hotspot policing strategy in use. The spatial distribution may change (produce displacement) if the strategy is not paired with a sustained resource commitment. Descriptive analysis of responses on the effects of dusk-to-dawn curfew on spatial crime displacement in North-Rift Counties of Kenya was also conducted using median, mode, frequencies, and percentages. The results are presented in Table 8.



Table 8: Descriptive Statistics on the Effects of Dusk-to-Dawn Curfew on Spatial Crime Displacement

Statement	No Extent	Little Extent	Moderate Extent	Great Extent	Very Great Extent	Median	Mode	N
Dusk-to-dawn curfew in hotspot areas has led to an increase in crime in neighbouring regions	4.8% (18)	19.3% (73)	2.4% (9)	51.3% (194)	22.2% (84)	4.00	4.00	378
Criminals have relocated their activities to areas with less stringent curfew measures	2.4% (9)	7.4% (28)	23.8% (90)	32.3% (122)	34.1% (129)	4.00	5.00	378
Spatial crime displacement is a direct consequence of dusk-to-dawn curfew in hotspot zones	4.8% (18)	10.3% (39)	33.9% (128)	33.6% (127)	17.5% (66)	4.00	3.00	378
Due to dusk-to-dawn curfew, crime has shifted from urban centres to rural or suburban areas	25.1% (95)	46.0% (174)	14.3% (54)	7.1% (27)	7.4% (28)	2.00	2.00	378
The geographic distribution of crime has changed significantly due to dusk-to-dawn policies	7.4% (28)	19.3% (73)	24.3% (92)	34.4% (130)	14.6% (55)	3.00	4.00	378
Crime hotspots have generally remained the same despite implementation of dusk-to-dawn curfew	14.8% (56)	24.1% (91)	9.5% (36)	26.5% (100)	25.1% (95)	4.00	4.00	378



The study examined the perceived effects of the dusk-to-dawn curfew on crime patterns in hotspot areas and neighbouring regions. Results showed that majority of respondents (51.3%, n = 194) agreed to a great extent that the curfew led to an increase in crime in neighbouring regions, with an additional 22.2% (n = 84) reporting very great extent agreement; the median and mode for this item were both 4.00, indicating general agreement. Regarding relocation of criminal activities, 34.1% (n = 129) of participants strongly agreed that criminals shifted to areas with less stringent curfew enforcement, while 32.3% (n = 122) agreed to a great extent; the median was 4.00 and the mode was 5.00. Spatial crime displacement was also perceived because of the curfew, with 33.9% (n = 128) indicating moderate extent and 33.6% (n = 127) great extent, and a median of 4.00. In contrast, only 14.5% combined (n = 55) reported a great or very great extent of crime shifting from urban centres to rural or suburban areas, with a median and mode of 2.00, indicating less agreement.

The geographic distribution of crime was perceived to have changed significantly by 48.9% of respondents, who agreed to a moderate to very great extent, with a median of 3.00 and mode of 4.00. Finally, 51.6% (n = 195) of respondents indicated that crime hotspots generally remained the same despite curfew enforcement, reflected by a median and mode of 4.00. Overall, these findings suggest a complex pattern of crime displacement linked to dusk-to-dawn curfew measures.

The findings of this study are in accord with Marigat and Cheruiyotomo (2022) who found that dusk to dawn curfew affected spatial crime displacement. In the North-Rift counties, criminals continue to use sophisticated weaponry despite dusk-to-dawn curfews and other hotspot policing strategies being implemented and cattle rustling continue to persist. A study by Mengistu (2015) showed that despite the Ethiopian government using dusk to dawn curfew to control destruction of major government infrastructure projects in Addis Ababa the resultant effects were spatial displacement of crimes to other regions.

On the question of whether dusk to dawn curfew has any effects on spatial crime displacement, Chief A pointed out that dusk to dawn curfew caused spatial crime displacement. Criminals tend to change the location of their criminal activities due to this curfew.

"...if dusk-to-dawn curfew is in active in Loima, the criminals move to Aroo, Chesegon, Suguta or Kainuk or even beyond into Samburu and Laikipia. There is no shortage of locations for these bandits." (Chief A)

Assistant Chief B stated that dusk-to-dawn curfew caused criminals to change their activities from the hotspot areas to the neighbouring areas. This has resulted into fear among the neighbouring communities and even countries.

"...whenever there is curfew in force in a place like Mukutani, Marigat, Barwessa, Bartabwa, or Tot, prepare either for curfew to happen in the neighbouring places or prepare for attack and invasion by bandits and cattle rustlers." (Assistant Chief B)

Village elder A stated that dusk-to dawn curfews leads to crime being shifted to unprotected areas where criminals can easily carryout their activities. Areas with less stringent dusk-to-dawn curfew measures become the new hotspot areas for criminals. Similar sentiments were also shared by Assistant County Commissioner C.

"...criminals will definitely move to curfew free familiar territory." (Village Elder A and Assistant County Commissioner C)

Assistant County Commissioner A also stated that despite the implementation of dusk to dawn curfew, crimes have remained the same and only the geographic region changes. Ward commander A further observed that criminals have come up with ways to evade the dusk to dawn curfews enabling them to carry out their activities without being discovered.

"...to evade curfew, the bandit would use less patrolled paths, routes and areas. Our officers cannot cover the entire expanse. Moreover, the porous borders also make it a challenge to control movement. Sometimes you

these strategies are perceptive. The people should get the impression that something is being done while the challenges of the vast terrain make it impossible to do any meaningful enforcement of the dusk-to-dawn curfew.”(Ward Commander A)

Ward commander C stated that curfew rarely helped address insecurity both at the place of implementation and beyond.

“...you know I told you these criminals don’t use the roads and those shopping centers there. These people are deep in the shrubs and hills. I think they do not even know if a curfew is in place. Which police officer will move through the thicket in the night to see who is violating curfew? The Kraals are in inaccessible, extremely remote, and hostile terrain areas. Still, I think curfew works. To safeguard innocent people and their property.”(Ward Commander C)

The Ward Commander C further stated that curfew works to avert crime, at the curfew zone at least, in other ways.

“...curfew prevents potential victims of crime from harm. For instance, Public Transport Vehicles (PSVs) that move along the crime zone will either be escorted by security agencies or wait regroup and form a formidable number before attempting to move across the terrain. During curfew, other crimes are also generally low as well.” (Ward Commander C)

The effectiveness of the dusk-to-dawn curfew can be enhanced if the focus is widespread across the region. This may limit violation, restrict movement of criminals, and thus reduce the likelihood of spatial crime displacement.

Effects of Dusk-to-Dawn Curfew on Temporal Crime Displacement in North-Rift Counties of Kenya

The study used chi-square to determine whether there was relationship between the dusk-to-dawn and temporal crime displacement. The results are shown in Table 9.

Table 9: Inferential Analysis on the Effects of Dusk-to-Dawn Curfew on Temporal Crime Displacement

		Inferential Tests		
		Value	df	P-Value
Chi-Square Tests	Pearson Chi-Square	1195.452 ^a	120	.0001
	Likelihood Ratio	589.327	120	.0001
	Linear-by-Linear Association	61.465	1	.0001
Symmetric Measures	Cramer's V	.562		.0001
	Contingency Coefficient	.772		.0001
	Pearson's R	.409		.0001 ^c
	N of Valid Cases	378		

a. 126 cells (88.1%) have expected count less than 5. The minimum expected count is .01.

Chi square results $X^2(2) = 1195.452^a$, $p = 0.0001 < 0.05$ showed the relationship between dusk-to-dawn curfew and temporal crime displacement was statistically significant. Cramer's V value was $.562 > 0.50$ which denoted a very strong relationship between the variables. The Pearson's R obtained was ($r = .409$, $p = 0.0001 < 0.05$) implying that the two variables are positively and significantly correlated. This was confirmed by the Contingency Coefficient measure of Association (CC) which revealed that 77.2% of the total variance in temporal crime displacement could be attributed to dusk-to-dawn curfew.

This means that hotspot policing strategy of dusk-to-dawn curfew 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 strategy of dusk-to-dawn though effective in crime reduction and control within the short term, its crime reductionist's impact dissipates quickly and the residual deterrence effects are weak and highly likely to decay without remedying the crime situation.

Temporal crime displacement may be inevitable. According to Carvalho and Guerra (2025) and Hertfordshire (2025) the hotspot policing strategies, such as dusk-to-dawn curfews, may cause criminals to change the timing of their activities e.g., from daytime to night-time and vice-versa. Descriptive analysis of responses on the effects of dusk-to-dawn curfew on temporal crime displacement in North-Rift Counties of Kenya was also conducted using median, mode, frequencies, and percentages. The results are presented in Table 10.



Table 10: Descriptive Statistics of the Effects of Dusk-to-Dawn Curfew Temporal Crime Displacement

Statement	No Extent n (%)	Little Extent n (%)	Moderate Extent n (%)	Great Extent n (%)	Very Great Extent n (%)	Median	Mode	N
Due to dusk-to-dawn curfew, criminals have changed the timing of their activities (day to night or night to day)	19 (5.0%)	19 (5.0%)	9 (2.4%)	118 (31.2%)	213 (56.3%)	5	5	378
Crime rates have increased during periods when dusk-to-dawn curfew enforcement have been relaxed	10 (2.6%)	46 (12.2%)	46 (12.2%)	120 (31.7%)	156 (41.3%)	4	5	378
Temporal displacement of crime is a noticeable outcome of dusk-to-dawn curfew strategy	9 (2.4%)	47 (12.4%)	127 (33.6%)	83 (22.0%)	112 (29.6%)	4	3	378
Criminals have adapted by committing crimes during times when dusk-to-dawn curfew efforts have been reduced	9 (2.4%)	10 (2.6%)	55 (14.6%)	111 (29.4%)	193 (51.1%)	5	5	378
Enforcement of dusk-to-dawn curfew has led to a shift in the frequency of criminal activities over time	0 (0.0%)	55 (14.6%)	85 (22.5%)	184 (48.7%)	54 (14.3%)	4	4	378
Crime times have generally remained unchanged despite enforcement of dusk-to-dawn curfew	65 (17.2%)	120 (31.7%)	55 (14.6%)	64 (16.9%)	74 (19.6%)	3	2	378



Participants' responses regarding temporal crime displacement due to the dusk-to-dawn curfew were analysed. The majority indicated that criminals changed the timing of their activities from day to night or vice versa, with 56.3% reporting this occurred to a very great extent and 31.2% to a great extent (Median = 5, Mode = 5). Similarly, 41.3% agreed that crime rates increased during periods when curfew enforcement was relaxed to a very great extent, and 31.7% to a great extent (Median = 4, Mode = 5). Regarding the perception of temporal displacement as a noticeable outcome of the curfew strategy, 29.6% of respondents agreed to a very great extent and 22.0% to a great extent (Median = 4, Mode = 3). Additionally, 51.1% indicated criminals adapted by committing crimes during reduced curfew efforts to a very great extent, while 29.4% indicated to a great extent (Median = 5, Mode = 5).

When asked about shifts in the frequency of criminal activities over time, 48.7% reported this occurred to a great extent and 14.3% to a very great extent (Median = 4, Mode = 4). However, opinions were more varied on whether crime times remained unchanged despite the curfew, with 31.7% reporting little extent and 17.2% reporting no extent, while 19.6% indicated a very great extent (Median = 3, Mode = 2). Overall, these findings suggest a strong perception that dusk-to-dawn curfew enforcement has influenced the timing and frequency of criminal activities, although some believe that crime timing has remained stable.

The findings are consistent with those obtained in a study by Fellmeth (2022). Fellmeth argued that the dusk-to-dawn curfew led to temporal crime displacement. Banditry and other crimes that have ravaged the North-Rift Counties of Kenya for decades, continue to exist due to temporal crime displacement.

Thematic analysis of the responses on the implication of dusk to dawn curfew on temporal crime displacement have been illustrated by views expressed through the focus groups as discussed below.

A member of County Assembly A stated that dusk to dawn curfew led to temporal crime displacement.

"...quite simply. Curfew at one time, and not all times exposes the other times for crime activity. Similarly, curfew at one place and not all places subjects the other places to more crime activities." (Member of County Assembly A)

Criminal have changed the timing of their activities to avoid curfews. Assistant County Commissioner B stated that crimes generally decrease when there is dusk to dawn curfew and increase when the curfew has been relaxed.

"...well during curfew here, Lami nyeusi is quite calm. We only here there are problems in Alale or Sigor. Maybe the criminals have moved to those places." (County Commissioner B)

The crimes are still the same only the time is different. Chief B stated that there are challenges such as lack of enough funds to implement the dusk to dawn curfew fully and comprehensively and the number of police officers, despite enhancement, are still low.

"...curfew does not make crime go away. Did curfew make covid 19 go away? Haha its arguable. But this is crime deeply infused and reinforced by some cultural beliefs. Do you think curfew order will just make it vanish? I think not." (Chief B)

Ward Commander B stated that hostility of conditions and lack of awareness of the local landscape and hide outs, uncontrolled border firearm trade and existence of well-structured militia group all fight to keep the criminal network alive. This makes it difficult to enforce the dusk to dawn curfew consistently and effectively.

“...the curfew is effective to some extent. Not for the bandits. But in a situation of active violence, it can restore calm temporarily. Also, you see, the police are strained of resources, when a curfew is in place, the response to time by police (usually three hours) can be reduced to less.” (Ward Commander B)

Representative of the business community A stated that the implementation of dusk to dawn curfew, especially late market curfew leads to reduced economic growth which affects the communities.

“...businesses and locals are hit the most by these curfews. We close early and products take longer to reach here. Criminals may end up breaking into our shops since no one is left to watch anything. We expect the police to be watching things and maybe they are not.” (Member of Business Community)

The Assistant Chief B also added that in implementing the dusk to dawn curfew the enforcers have to come up with new methods that criminals are not familiar with.

“...today for example, they hit Kainuk, you enforce curfew here. Tomorrow, they will be hitting Elchamus, Marakwet, and Baringo. To them curfew or no curfew, their lives go on almost in a similar fashion. The police need to hire the right people to confront them. Police alone will not win. Curfews alone will not help.” (Assistant Chief B)

Assistant chief C stated that the number of crimes in the area continues to exist despite the implementation of hotspot policing strategy. The criminals flip their operational time. This is possible since they have intricate understanding of their environment. Brantingham and Brantingham (2017) have pointed out that the criminal ecosystem contribute to the success and failure of crime control efforts such as dusk-to-dawn. For the North-Rift, the criminal ecological characteristics have largely contributed to the little significance of hotspot policing strategies overall.

7. CONCLUSION AND RECOMMENDATIONS

In this article, we have explored the effects of dusk-to-dawn curfew on spatio-temporal crime displacement. The study has established that dusk-to-dawn curfews contribute to spatio-temporal crime displacement within rural crime hotspots such as the North-Rift of Kenya. Therefore, while dusk-to-dawn curfews are essential in disrupting active crime and violence places, the strategy fails to guarantee this crime reductionist outcome overtime both at the target area and regions beyond. As such, its use, particularly overreliance and effectiveness, is short-lived at best. Instead, criminals adoptive as they are, shift their crime to curfew free zones and curfew free times.

As we have demonstrated for rural crime hotspots such as the North-Rift of Kenya, spatio-temporal crime displacement is highly probable. The impact of hotspot policing strategies like dusk-to-dawn curfew is thus significantly undermined. This is not to suggest that hotspot policing strategies are ineffective in crime control everywhere every time, but to forewarn about the complexities that may render hotspot policing strategies ineffective or even counterproductive especially when responding to rural crime hotspot frontiers.

We recommend the dispersed usage of dusk-to-dawn curfew across the entire familiar geographical areas considered as hotspots. While this may come at a cost (financial and personnel), combining the hotspot strategy with other community-led policing strategies, intelligence-led policing, the use of technology in policing such as the use of drone surveillance systems can produce stable crime responses and security overtime.

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