

# Unauthorized Deactivation of Early Warning Signals in Communities: Novel Insight on Dognapping and Property Theft

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Publication Date: 2026/05/02

**Abstract:** The study investigated an unusually high rate of dognapping and property theft. Concern arose because the spike occurred outside the usual Christmas season, a period historically associated with higher crime rates in the area. Seventy households were purposively sampled, and all questionnaires were retrieved and analyzed using descriptive statistics, graphical illustrations, and correlation analysis. Also, spatial visualization was done through kernel density to show the concentration of crime via continuous surfaces. Findings revealed that most dognapping incidents occurred at night (72.86%), though a growing number were reported in the morning (15.71%). While the Christmas season had the highest overall crime rate (87.14%), the surge in dog theft outside this period indicated emerging criminal strategies. Poisoning accounted for 21.43% of cases, reflecting organized efforts to bypass security detection, which respondents identified as the main motive (40%). Adult dog prices also rose significantly between 2018–2019 and 2020–2021, with a strong positive relationship suggesting economic incentives behind the thefts. The concentration of property theft and dognapping in the southwestern part shows purposeful dognapping, with dognapping preceding property theft. The subsequent occurrence of property crimes confirmed that many dog thefts were preparatory acts for broader criminal activities rather than isolated incidents. The study emphasizes that communities must recognize such abnormal patterns as early warning signs and adopt proactive, community-driven security measures to prevent future crimes.

**Keywords:** Dognapping, Crime, Security, Seasonality, Prevention.

**How to Cite:** Dakagan, J. B.; Barnabas, A.; Sambo, J. N.; Maikori, B. B.; Ishaya, S. D.; Inuwa, J.; Maibege, T. E.; Ameh, I. A. (2026) Unauthorized Deactivation of Early Warning Signals in Communities: Novel Insight on Dognapping and Property Theft. *International Journal of Innovative Science and Research Technology*, 11(4), 2906-2912. <https://doi.org/10.38124/ijisrt/26apr661>

## I. INTRODUCTION

Early warning signals are alerts that help individuals, communities, and organizations anticipate and respond quickly to impending danger, thereby reducing losses and damage. Rising crime has increased the need for diverse early warning systems, including biological forms such as trained animals. In many developing countries where advanced real-time monitoring technology is limited, communities rely on local improvisation for crime detection. One common and effective example used by both government and private security is the dog, valued for its ability to sense threats early and raise alarms. Dog theft (dognapping) has become an emerging community crime that requires close monitoring and targeted responses. As crime grows more complex and varies across communities, interventions must be locally tailored to

address specific challenges. Criminal activities often involve hidden strategies that only become clear after the act, and offenders increasingly develop ways to evade or disable early warning systems designed to detect them.

Dogs are highly versatile animals and were the first species domesticated from wild ancestors<sup>1</sup>. Their long history of selective breeding reflects valuable sensory abilities and physical traits<sup>2,3</sup>. Through domestication, dogs developed strong behavioral adaptation and social bonding with humans. Dog ownership is widespread globally; about 30% of households in the UK own dogs, with regional variation (21–38%), while ownership reaches roughly 40% in the US and Australia<sup>4,5</sup>.

Dogs' exceptional sensory abilities make them valuable in policing, border control, travel security, and military protection services<sup>6,7</sup>. They can distinguish familiar people from strangers, sometimes more effectively than security systems, making them useful for crime prevention. At the household level, dogs serve as both alternative and complementary forms of basic security<sup>8</sup>. Beyond security roles, dogs are also valued as a source of meat by some ethnic groups across several Nigerian states<sup>9</sup>. Dog meat may be used for ritual or ceremonial purposes, regarded as a delicacy, consumed during periods of conflict or hardship, and believed by some to have medicinal value<sup>10,11,12,13</sup>.

Dogs' strong social nature reinforces their value in security roles, as they communicate effectively with humans through a wide range of vocal signals. Their sounds evolve through adaptation to human interaction<sup>14</sup>. Barking short, repetitive, and varying by breed and individual, is the most prominent signal, commonly used in close-range situations for greeting, warning or alerting, seeking attention, or play.

In the UK, dog thefts rose from 1,559 in 2015 to 1,842 in 2017, while court charges for these crimes declined over the same period, dropping from 64 (3.97%) to 39 (2.11%)<sup>15</sup>. Studies in Italy and Spain show that dogs are the main victims of animal poisoning. In Italy, dogs accounted for 71.1% of 304 poisoning cases (2011–2013), with insecticides, especially methomyl, being the primary cause<sup>16</sup>. Similarly, in Spain, most of the 260 poisoning cases involved insecticides, with all methomyl cases being intentional<sup>17</sup>.

Research shows that the presence of dogs can reduce property crime. In Milwaukee, areas with licensed dogs had 1.40–1.71% lower property crime rates than areas without dogs<sup>18</sup>. Similarly, in Britain, dogs deter opportunistic burglars from targeting homes, particularly in communities where strangers may exploit open access for theft. In Britain, rising demand and prices for dogs have been linked to increased thefts. Between 2019 and 2020, puppy prices rose sharply (e.g., from £810 to £1,875), and adult dog prices, such as English Bulldogs, also increased<sup>19,20</sup>. Higher values have drawn organized crime groups' attention, with 10–15% of OCGs in Wales reportedly involved in dog theft<sup>21</sup>. Research shows that dogs deter burglars and other criminals, as many offenses are opportunistic. Even simple dog-warning signs can discourage potential offenders from targeting residences<sup>22,23</sup>.

In Nigeria, traditional pre-slaughtering of dogs involves cruel methods such as strangulation with motorcycle cables, confinement in sacks, and beating with sticks or iron rods until the dogs suffocate to death. In Angwan Kare, Jos South, Plateau State of Nigeria, 95% of butchers use strangulation as the preferred pre-slaughter method for dogs, citing its ease and effectiveness at the local dog market<sup>24</sup>.

## II. REVIEW OF LITERATURE

Globally, the number of dogs is between 700 million and one billion, making them the most abundant carnivores<sup>25</sup>. In Nigeria, the dog population is about 4.5 million<sup>26</sup>, with many kept primarily for security<sup>27</sup>. In Jos South, Plateau State,

75.7% of residents keep dogs due to rising insecurity<sup>28</sup>, but this security role has increasingly made them targets for attacks. Around 80% of the world's dogs are free-ranging and social, interacting through behaviors like territorial marking, mating, barking, and howling<sup>29,30,31</sup>. In communities, dogs help alert and protect people, offering safety, emotional support, and guidance for secure movement<sup>32</sup>.

Dog stealing, or dognapping, is increasingly alarming in areas previously less affected. Since pets are often considered family members, the crime has emotional impacts similar to kidnapping, prompting calls for stronger legal penalties for offenders<sup>33</sup>. Global statistics highlight the growing concern of dog theft. In England and Wales, reported dog thefts rose from around 1,700–1,800 in 2015–2016 to nearly 1,977 in 2017, with media reporting sharp increases and labeling some areas as hotspots, emphasizing the escalating problem<sup>34,35,36,4</sup>.

The motives behind dognapping remain partly mysterious, with dogs valued economically, medicinally, and culturally. Some perpetrators, like Ali, cite unemployment and high seasonal demand, stealing 10–40 dogs per day. However, unemployment or other factors do not justify the crime, and offenders remain legally accountable. Dognapping operations are flexible, with no fixed locations, relying on quick contact and delivery. Methods have evolved from crude killings of stray dogs to using lassos to silently capture them, often by novices. Contrary to popular belief, thefts usually occur between 4–6 a.m., when human alertness is low, increasing the chances of success<sup>37</sup>. A major concern for dog owners is dog poisoning, which differs from theft and involves intentionally killing dogs for unknown or malicious reasons. Such acts may be aimed at facilitating crimes, kidnappings, or broader attacks within the community. Deliberate dog poisoning, often using methomyl, is carried out by thieves who view dogs as threats that could expose criminal activity. In Turkey, intentional poisoning mainly targets stray and security dogs, which are more vulnerable<sup>38,17</sup>. Unlike lawful dog killings, poisoning is illegal and malicious. In China, reports indicate dogs are intentionally weakened or poisoned using anesthetic blowpipes or diethyl-laced food to capture them alive for theft or consumption<sup>37</sup>.

Crime is closely linked to geographic and environmental factors, as offenders select targets based on location characteristics that provide opportunities to commit crimes and escape detection<sup>39,40,41</sup>. Offenders often exploit familiar locations, monitoring them to identify optimal opportunities for crime. Areas lacking human or formal surveillance, such as poorly lit streets, deserted spaces, and rundown buildings, become hotspots for criminal activity. Crime geography studies how the physical and temporal characteristics of a location influence criminal behavior<sup>42,43</sup>. In many developing countries, criminals often commit offenses and evade capture, making it difficult even for investigators to obtain confessions. Studying crimes at their actual locations is therefore crucial for understanding and preventing them. Crime hotspots are specific areas with higher-than-average criminal activity, identified using historical crime data. Recognizing these areas helps in the efficient allocation of resources, strategic planning, and targeted interventions. Timely and accurate

information on crime enables more effective prevention efforts<sup>44</sup>.

Although the community recognizes the problem, there is limited awareness of how dognapping is strategically used to facilitate broader criminal activities. No prior study has specifically examined the deactivation of early warning signals through dognapping and its consequences. This study investigates how dognapping, as an unauthorized deactivation of community early warning signals, drives property theft and provides new insights into the security dynamics affecting vulnerable communities.

### III. MATERIALS AND METHODS

The study collected both qualitative and quantitative data directly from dognapping and property theft victims. Respondents were purposively selected for their relevant knowledge, and affected households were visited to identify specific locations of dog theft and property loss.

#### A. The Study Area

The study area is bordered to the north by the road from Grand Cereals junction to the College of Health Technology Zawan, to the east by a river separating it from Chom-Challang, to the south by a river near the Police Staff College, and to the west by the Jos-Mararaban Jama'a express road.

The community is cosmopolitan, comprising mainly Plateau tribes (Berom, Pan, Tarok, Mwaghavul, Mushere, Angas, Bogom) and others like Igbo, Yoruba, and Ibibio. Most residents are civil servants, with limited agricultural activity, while business, especially tin mining and processing, is prominent. The area hosts offices like the National Union of Teachers, Federal Road Safety Commission, National Union of Local Government Employees, Christian Association of Nigeria, Nigerian Communication Commission, educational institutions, churches, and hotels, reflecting a mix of administrative, educational, and commercial functions.

#### B. Data Scouting

Collecting data for this study was unprecedented due to high crime rates and ineffective local police, leaving little to no secondary data available. While respondents were willing to discuss property theft, dog theft was sensitive, making primary data essential for accuracy. Most dogs were local breeds, so breed type was not considered a major factor.

#### C. Data Collection

Data were collected from 70 respondents through interviews and questionnaires, with answers often recorded directly to ensure completeness. All questionnaires were retrieved, focusing on time, seasonality, reasons, method of dognapping, and prices of dogs. Properties stolen included metal, car battery, and electrical gadget theft, with dog theft often preceding broader property crimes.

#### D. Data Analyses

The primary data collected were analyzed using descriptive statistics such as percentages and pie charts, and inferential statistics (correlation analysis) in SPSS software. Kernel Density Estimation (KDE) in ArcGIS was used to

convert crime incident points into a continuous surface showing areas of high and low crime concentration. It enabled visualization of crime intensity and supports proactive planning and resource allocation.

## IV. RESULTS

### A. Temporality of Dognapping

The data indicate that most incidents occur at night (72.86%), with far fewer happening in the morning (15.71%), afternoon (8.57%), or evening (2.86%) (Table 1). This suggests that criminal activities, including dog theft and property crimes, are heavily concentrated during nighttime hours.

Table 1 Time of Dognapping

S/N	Time	Percentage
1	Morning	15.71
2	Afternoon	8.57
3	Evening	2.86
4	Night	72.86
	Total	100

The results show that most crimes or incidents occur around Christmas (87.14%), while very few happen during Easter (1.43%), Sallah (1.43%), or Independence Day (2.86%) (Table 2). A small portion (7.14%) occurs at any time. This suggests that criminal activity spikes significantly during the Christmas period.

Table 2 Festivity and Crime

S/N	Festivity	Percentage
1	Christmas	87.14
2	Easter	1.43
3	Sallah	1.43
4	Independence	2.86
5	Anytime	7.14
	Total	100

The data show that most incidents occur between July and September (38.57%) and October and December (27.14%), while very few happen from January to March (1.43%) or April to June (2.86%). A significant portion (30%) is unspecified (Table 3). This indicates that crime peaks in the latter half of the year, particularly during mid-year to year-end months.

Table 3 Seasonality of Dognapping

S/N	Season	Percentage
1	Jan-March	1.43
2	April-June	2.86
3	July-September	38.57
4	October-December	27.14
5	Unspecified	30
	Total	100

**B. Method of Dognapping**

The results show that most dogs were reported as “None” (37.14%) or “Lost” (32.86%), while poisoning accounted for 21.43% of cases. Hooking and slaughtering were less common, each at 4.29% (Table 4.). This suggests that loss and poisoning are the primary issues affecting dogs in the community. Poverty and unemployment could lead to dognapping, but the introduction of poisoning meant more than people understood.

Table 4 Method of Dognapping

S/N	Season	Percentage
1	Hooking	4.29
2	Slaughtering	4.29
3	Lost	32.86
4	Poisoning	21.43
5	None	37.14
	Total	100

**C. Reasons for Dognapping**

The study found that the main driver of dognapping was the intent to avoid security detection (40%), suggesting organized criminal motives rather than just poverty or unemployment (Fig. 1). The frequent use of poisoning

indicated deliberate elimination of guard dogs, serving as a warning sign that further crimes were likely to follow once community security was weakened.

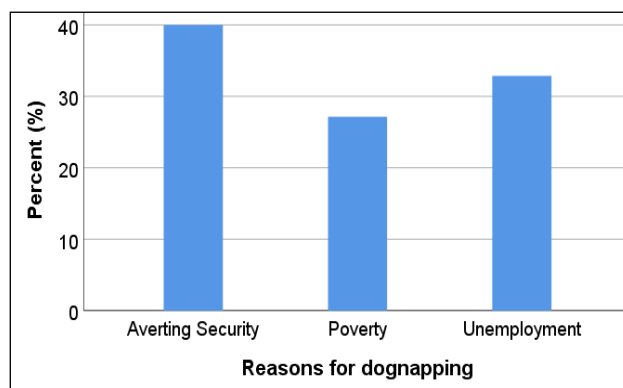


Fig 1 Reasons for dognapping

**D. Prices of Local Adult Dogs**

The average dog prices increased significantly from 2018–2019 (mean ₦5,228.57) to 2020–2021 (mean ₦11,042.86). Price ranges also rose, from ₦3,000–₦12,000 to ₦5,000–₦15,000, and variability increased slightly, as seen in the higher standard deviation (Table 5). This indicates a substantial rise in dog market values over the period.

Table 5 Increase in Adult Dog Prices from 2018–2019 and 2020–2021

	Minimum	Maximum	Mean	STD
Dog prices 2018-2019	3,000	12,000	5228.57	1495.611
Dog prices 2020-2021	5,000	15,000	11042.86	2095.099

The Pearson correlation of 0.413 between dog prices in 2018–2019 and 2020–2021 is positive and statistically significant (p = 0.000) (Table 6). This indicates a moderate relationship, meaning areas or cases with higher dog prices in 2018–2019 tended to also have higher prices in 2020–2021. The alternate hypothesis, which states that there is a significant relationship between dog prices in 2018–2019 and 2020–2021, is hereby established.

Table 6: Correlation Between Dog Prices in 2018-2019 and 2020-2021

		Dog prices 2018-2019	Dog prices 2020-2021
Dog prices 2018-2019	Pearson Correlation	1	.413**
	Sig. (2-tailed)		.000
	N	70	70
Dog prices 2020-2021	Pearson Correlation	.413**	1
	Sig. (2-tailed)	.000	
	N	70	70

\*\* . The correlation is significant at the 0.01 level (2-tailed).

**E. Spatial Density of Crime**

The kernel density map shows that dognapping incidents are highly clustered rather than randomly distributed, but concentrated along identifiable corridors, linked to accessibility routes in the vulnerable neighborhood (Figure 4.2). The main hotspot appears in the central-western area (highest density), with secondary clusters extending through the central and south-eastern zones. Orange areas indicate emerging or moderate activity, while the outer red zones record low incident levels. Overall, the pattern highlights key priority areas where targeted surveillance and proactive crime-prevention measures are most needed.

Dognapping and general theft incidents exhibited a clear spatial concentration, with density patterns clustering and progressively routing toward the vicinity of a scrap metal company in the western part of the study area. This directional trend suggests that the company’s surrounding environment functioned as an attractive node or convergence point for offenders, possibly due to ease of concealment, access routes, or the presence of informal trading activities. Consequently, the scrap metal company area emerged as a notable hotspot within the overall crime distribution, indicating the need for targeted surveillance and community-based preventive measures in and around the location.

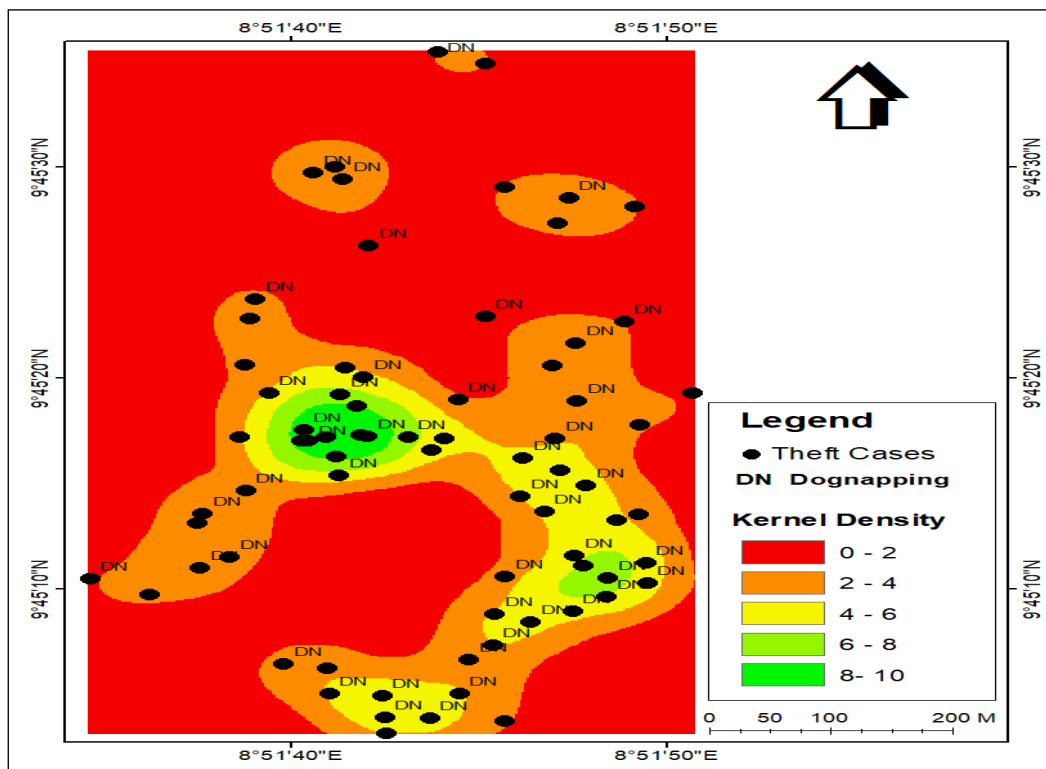


Fig 2: Density Map of Crime

**V. DISCUSION**

The residential area, bordered by a river, is primarily inhabited by long-term residents. Dognapping mostly occurs at night, aligning with previous reports, but some thefts happen in the morning when residents are less alert. Crime spikes during Christmas due to the predominantly Christian community, making festive periods particularly targeted.

During the study period, dognapping peaked in July–September, which contrasts with previous reports that linked high dog theft to winter and the Christmas season<sup>37,45,46</sup>. This mid-year spike was unusual and deviated from earlier community crime patterns. In the area, the most common dognapping method was dogs simply going missing, leaving the cause unspecified. Poisoning accounted for 21.43% of cases, highlighting a deliberate tactic beyond poverty or unemployment as motives. This finding aligns with those of<sup>38,16,17</sup>.

The main reason for dognapping was to circumvent security. This supports previous studies showing dogs are targeted to facilitate property theft in residential areas, highlighting their recognized role in community security<sup>38,8,27,28,32</sup>. Rising dog prices from 2018–2019 to 2020–2021 align with previous reports and have contributed to increased dog theft. According to GAIN, higher dog theft rates, in turn, have fueled broader criminal activity in the area<sup>21,19,20</sup>.

**VI. CONCLUSION AND RECOMMENDATIONS**

The rising crime rates highlight the critical need for early warning systems, with dogs playing a key role in detecting and deterring criminal activity. Modern dognapping methods aim to bypass these security measures, so communities must remain alert to sudden spikes in theft. Geographic and environmental features also influence security and should be leveraged proactively. The following recommendations are hereby proffered:

- The government should require that uncompleted buildings have windows and doors secured to prevent them from being used as hideouts for criminals.
- Traditional hunting practices should be revived, with periodic forest and hill patrols by ancestral hunters and forest guards under local authority, to help deter criminal activities.
- Communities should establish their own internal security networks to enable rapid responses to crime before government intervention arrives.
- The government and NGOs should promote skills acquisition and provide entrepreneurial support in schools and communities to reduce youth unemployment and limit their involvement in crime.
- Government should provide surveillance cameras at strategic points in communities.
- Where crime is on a wider scale like attacks on communities, technology like drones should be deployed immediately to track fleeing attackers.

### ACKNOWLEDGEMENT

We are sincerely grateful to the community for the cooperation given to the research team in the course of this work.

#### ➤ Funding

No funding was received from individuals or corporate organizations.

#### ➤ Conflict of Interest

The authors hereby declare that there was no conflict of interest.

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