



Where can offenders be found when they are not committing crimes? A cross-sectional survey of British police officers on non-crime locations

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ABSTRACT

To date, the bulk of research on place and crime has concentrated on crime scene locations and home addresses of both victims and perpetrators. Beyond these locations, less is known about where offenders can be found during regular, non-criminal activity. These 'non-crime locations' provide information about offenders' lifestyles, their relationships with co-offenders, their preferred spots, and the places beyond the spatiotemporal boundaries of the crime where they may plan, manage, or deal with the aftermath of their behaviour. Yet there is a lack of systematic evidence, with the available research relying on local ethnographic designs, small samples or both, as access to such data was limited. This study utilises a novel approach by relying on the professional experience of intelligence police officers assigned to deal with serious and organised crime in the West Midlands County of the United Kingdom to determine the whereabouts of three types of non-crime locations: (a) hangout spots, (b) recruitment spots and (c) contraband hideout spots. Results suggest that offenders frequently visit gyms, specific restaurants, or private residences (not unlike locations where normative people hang out), and new members can be recruited anywhere. Drugs and firearms are strategically hidden near vulnerable persons. According to police officers, offenders are unconcerned by surveillance in these spots and choose venues not usually owned by criminal groups. Theoretical, methodological, and practical implications are discussed.

1. Introduction

The criminology of place concentrates on the crime scene and the addresses where offenders and their victims live. However, the spaces where criminals can be found when they are not committing crimes are understudied. At least for crimes committed by groups of two or more, the activity requires offenders to meet before committing an offence, recruit co-offenders, plan the offence, and often store contraband such as drugs and weapons [1–5]. Despite this, less attention has been paid to places where these preparations occur, especially regarding offenders' routine activities [6], hotspot policing [7,8], offenders' lifestyles [9], and criminal patterns of behaviour [10,11].

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Furthermore, while some crimes are sporadic, premeditated crimes do not occur in a singular moment. The literature on crime scripts shows that all such activity has a beginning, middle and end, with various decision points along the way [12]. There are antecedents to and consequences of crime, with associated spatial and temporal components. For example, offenders congregate, form social ties and expand their networks through reinforced anti-social norms [13]. Furthermore, just like everybody else, offenders are social creatures who 'hang out' with their peers. However, it is unclear whether their hangout spots differ from those frequented by normative people in society.

This paucity of research also mirrors practice. Based on police data used to inform policy, overt and proactive place-based policing initiatives focus almost exclusively on crime scenes [14,15]. However, focusing resources on one place alone seems insufficient. Instead, the police should actively engage with additional places that are conducive to or indirectly linked to the criminal act [16]. If certain places attract prospective criminals, are more likely to facilitate criminal networks or represent areas where weapons and drugs are easily concealed, the police should be aware of them.

Brantingham and Brantingham [17] highlighted the limitations of the predominant approach, identifying that offenders meet at fast food restaurants (e.g. McDonald's and KFC), shops and bars. Such locations would attract routine preventative policing activity, but only if they were to become crime scenes (e.g. vehicle crimes in a restaurant car park, shop thefts or alcohol-related violence). Understanding these locations and whether they overlap with crime spots may enable law enforcement to identify active offenders [18, 19], particularly criminal groups such as gangs, organised crime syndicates or terrorist cells (but cf. 20, 21). Effective utilisation of anticrime tactics depends on systematically understanding appropriate deployment locations for maximised effect [22–24]. In this paper, we sought to collate such information.

2. Literature review

2.1. Crime locations, offenders' addresses and the journey between these two points

The literature on risky facilities and crime locations is rich [25–27]. Places are important in crime analysis [28] because every criminal event has a specific spatial component. Certain places have inherent features that make them susceptible to crime [29,30]. There is also an intrinsic Pareto distribution in place-based crime data, with a limited number of places that repeatedly experience a disproportionate amount of crime [31,32]. This virtue makes hotspots predictable and potentially malleable to interventions to decrease crime. Evidence suggests consistent success in cooling down hotspots relative to control conditions [33] without spatial displacement to other places [34]. However, the cool-down effort effects rapidly dissipate after a few hours or days [35–38].

Other places that have attracted scholarly interest are the home addresses of offenders and victims. There seem to be hotspots in these two types of locations, with repeated criminal incidents occurring at specific addresses over time and a disproportionate number of offenders' addresses 'producing' crime and delinquency [39–43]. Although many crime-involved locations have certain ecological and sociodemographic attributes [44], they are often indistinguishable from non-crime locations.

The journey between these two points – abodes and crime scenes – has also been investigated. For example, offenders have limited areas of activity and prefer not to travel far to commit a crime [45–47]. This limited mobility suggests they are active in their neighbourhoods [48]. Many tend to return to the same place [49,50]. Brantingham and Brantingham [10,51] describe these paths as crime patterns, with specific nodes associated with the criminal journey. They show how offenders have 'normal' lives, travelling between home and work through shopping and entertainment facilities; however, they occasionally commit crimes within these awareness fields. There are crime generators or crime attractors at varying places in these activity zones (see 52, pp. 106–108), with clear anchor points [53].

2.2. Non-crime locations

Identifying locations where offenders converge between crimes seems critical for understanding the criminal journey from a much broader perspective [54]. The routines of offenders do not start or end at the crime scene [6]. While routines may only indirectly affect crime, they are nevertheless part of the crime phenomenon. Conceptually, non-crime locations are essential because criminal activity, by its very nature, is often a social enterprise. It is not uncommon for offenders to engage with one another before and after the criminal act occurs, at least for the crimes that are likely to be committed in groups of two or more [13]. Whether they interact in establishments owned by criminal organisations or facilities enjoyed by their organised criminal networks, offenders tend to socialise [55]. Thus, knowing where prospective offenders can be located and whether there is a clear distinction between their social and criminal activities enriches multiple lines of research on offenders' routines, co-offending or analysis of spatial crime patterns.

2.3. Hangout spots

Felson [56] emphasises the significance of offender convergence settings, which are recurrent locations that persist over time and offer stable and predictable environments for identifying similar people who may be motivated to commit crimes. Bars and parks are among the location types highlighted in this work. Due to the anonymity provided to offenders, hangout locations in well-populated locations such as shopping malls, transit stations and busy streets have a greater propensity to become preferred places for offenders to frequent. Cohen and Felson [6] discovered that the presence of many people and constant movement makes it easier for criminals to blend in and conduct their activities undetected, suggesting that some hangout spots are also crime hotspots. Thieves may engage in pickpocketing, purse snatching, and other forms of theft in crowded shopping areas, preying on distracted or unaware individuals.

Still, they may also frequent these places socially. Similarly, busy transit locations can be hotspots for a variety of crimes, including drug dealing, antisocial behaviour, unwanted sexual behaviour, and assaults [57], because offenders have opportunities to approach potential victims in a transient and chaotic environment; again, however, these may also be spots offenders would prefer to frequent for non-crime purposes [21].

Apart from locations that may be both hangout spots and crime hotspots, the literature identified other locations where criminals may be found 'between jobs'. Nightclubs, bars, and other entertainment venues attract offenders [58], as do places with alcohol consumption, dim lighting, and a relaxed environment [53]. Late-night hours and the possibly altered states of visitors to these areas may lure criminals. While, as noted above, busy shopping centres are frequently chosen congregation spots for criminals [59], offenders are also likely to go shopping for clothing and food in these areas. People who commit crimes are just that – people – and they can be found eating at home, in restaurants or anywhere else that people typically eat. No specific data suggests that people who commit crimes dine in any particular location more frequently than others.

Similarly, it is unclear whether designated hangout spots for criminals, exclusive to their use, are commonplace. Certain bars and 'gentleman's clubs' have been identified with specific organised crime groups. In the past, there have been reports that the Hells Angels motorcycle gang, frequently associated with criminal activity, owned a clubhouse on Eastern Avenue in Toronto, Canada and another on Third Street in Manhattan, New York. The Ace Cafe in London and the Sopotnick's Cabbage Patch Bar in Florida during Bike Week are well-known meeting spots for members [60,61]. However, these may be the exception rather than the rule, as such enterprises are not economically viable if they only serve criminals. Instead, it seems more likely that hangout spots are places where offenders can interact with like-minded individuals or engage in activities unrelated to criminal behaviour: local bars, clubs and social clubs where they can establish networks, build social capital or simply socialise with others who share their interests [62]. Although these social interactions may not always involve discussing or planning criminal acts, they can still contribute to a sense of belonging within a deviant subculture [3].

In their neighbourhoods or communities, offenders may also frequent areas that serve as local gathering spots. These locations may be parks, intersections, community centres or local businesses. By spending time in these locations, offenders can maintain social connections, engage in recreational activities and establish a sense of identity in their immediate surroundings [63]. These hangouts may establish familiarity and support networks within their communities and provide a sense of belonging and camaraderie. However, these ties can also facilitate criminal opportunities [64].

Hangout locations offer a degree of seclusion and limited surveillance that benefits illegal drug users [65,66]. Abandoned buildings or vacant properties provide a sense of privacy and have a diminished likelihood of detection by or interference from either law enforcement members or the broader community [67]. Generally, squatting locations and encampments provide a sense of security, camaraderie, and shared experiences among peers in similar situations. Characterised by a transient way of life, these communities can foster drug use [68].

On the other hand, some drug users may select public parks or open spaces for drug transactions and consumption. The accessibility and relatively laid-back atmosphere of public parks can make them appealing to drug users [69]; the outdoor setting provides a sense of independence and reduces the perception of risk associated with such behaviour indoors. In particular, younger offenders may engage in cannabis consumption in discrete corners of parks or secluded areas of open spaces [70]. Some indoor bars and clubs may also foster an atmosphere where drug use is prevalent or tolerated, and these establishments can attract offenders who combine drug use with other social activities [71]. Individuals seeking to engage in recreational drug use may find these environments alluring due to their permissive environment and diminished likelihood of intervention or enforcement.

2.4. Recruitment spots

Different explanations have been provided by Englefield and Ariel [13], McGloin and Povitsky Stickle [72] and more recently, Rowan et al. [21] for the reasons why people may commit crimes together. While theories on co-offending vary, it is known that crimes involving two or more people first necessitate identifying appropriate accomplices. There are likely to be offenders who, when committing a crime with another person(s), will intentionally act with the same co-offenders, whereas other offenders – or the same offenders, but under different circumstances – seek various accomplices for different crimes from a pool of candidates [73]. Curiously, an average co-criminal relationship lasts for only one event ([74,75]), suggesting that most group crimes, excluding organised and gang-related crimes, are 'rotational': spontaneous collaborations based on opportunity and short-lived interest instead of long-term relationships. The choice is contingent on many factors, including the availability and ability of suitable co-criminals and, perhaps most importantly, trust [76].

From a spatial perspective, the opportunity to meet and informally screen candidates necessitates specific locations that would attract potential accomplices and enable interaction. The convergence of offenders seeking partners offers knowledge about the patterns of criminal behaviour. Non-crime locations are likely to be places where co-offenders can be found, where the place is considered free from risk of apprehension and where information leading directly to criminal activity can be shared, even if the individuals change partners from one crime to the next [3,77].

As with hangout spots, whether these co-offender non-crime locations are exclusive to offenders or the 'general population' is unclear. These locations may be part of offenders' regular social routines, which the general population shares [77,78]. Co-offending networks are likely to emerge in facilities that are characterised by ethnic homogeneity and greater residential stability, which are all indicators of greater trust among informal networks and ties that facilitate co-offending linkages [79]. However, these features characterise broader neighbourhoods rather than specific facilities.

Moreover, the interaction of spatial and social networks [80] can lead to the emergence of crime. Rowan et al. [21] demonstrate

that key ‘activity nodes’ may be associated with the intersection of offender interactions and group crime opportunities: some aspects of the built environment are correlated with the rate of co-offending, specifically ‘pedestrian-friendly street connectivity and transit stations’ (p. 694). These public spaces facilitate spontaneous collective behaviour [81]. While this study may be limited to street crime (where non-crime locations and actual crime spots are the same), it suggests how crime pattern theories intertwine with ecological manifestations of group offending [82].

2.5. Contraband hideout spots

Lastly, there may be non-criminal locations where criminals conceal contraband, such as drugs, weapons or equipment used to commit a crime. For instance, criminals frequently hide contraband in hidden compartments of vehicles. These compartments can be custom-built into the vehicle’s structure or concealed in areas including seat cushions, dashboards or trunks [83]. Concealed compartments allow criminals to transport contraband without being detected. Law enforcement agencies frequently encounter difficulty detecting these concealed compartments due to their sophisticated designs and ability to blend in with vehicle interiors [84].

Criminals also use hidden locations in remote or natural environments such as forests, fields or vacant lots. Offenders may use tools or the surrounding environs to create hiding places and bury contraband underground or conceal it in concealed compartments [85, 86]. In many instances, criminals use false compartments to conceal contraband within residences in walls, floors, furniture and other structural components. These techniques help criminals protect contraband from searches, raids and routine inspections. Law enforcement agencies must frequently rely on sophisticated investigative methods and equipment to reveal these hidden spaces [87, 88].

2.6. The present study

These activities and locations raise fundamental questions: Where do offenders find each other? Where do they hide or conceal their stolen goods? Where are their weapons, drugs and other contraband stored? More broadly, where do offenders socialise, and are these spots different from general population congregation spots? This research seeks a systematic understanding of these issues. It focuses on serious and organised crime offenders who are more likely to commit group crimes and can shed light on the various locations and activities discussed in this paper.

“Organised crime,” “street gangs,” and “serious crime” in England and Wales: A Preliminary Definitional Note.

Practitioners and academics investigating organised crime in the United States and the United Kingdom hold divergent views on the composition of such behaviour, which can be attributed to historical contexts, cultural influences and the types of criminal activities prevalent in each jurisdiction (see 89–91). Although these perspectives may contain overlapping elements, they have significant differences.

The Regional Organised Crime Units (ROCU) and the National Crime Agency (NCA) are the primary agencies that aim to disrupt organised crime in the United Kingdom. In this context, organised crime refers to criminal activities that involve a structured and hierarchical network of individuals or groups collaborating to commit serious crimes for financial gain. Often spanning multiple regions or jurisdictions, these criminal activities necessitate a collaborative approach to investigation and disruption [92]. The NCA [90] defines these individuals as those engaged in ongoing and premeditated illegal activity by a group acting in concert for profit and power. In contrast, street gangs are typically smaller, territorially focused groups that engage in criminal activity in particular neighbourhoods or areas. Although street gangs may pursue illicit financial gain, their organisational structure is typically less sophisticated and formal than that of organised crime networks [93]. Street gangs frequently focus on territorial control, violence, drug trafficking or other illegal activities within their immediate area.

US scholars traditionally approach the study of organised crime from a syndicate-based perspective. This viewpoint emphasises criminal organisations with complex hierarchies, such as the Italian-American mafia and Colombian drug cartels. Such work frequently emphasises the entrepreneurial aspects, economic motivations and quest for power within the syndicates [94]. On the other hand, the UK perspective tends to conceptualise organised crime in a manner that encompasses hierarchical criminal networks but also looser, more fluid group formations [95,96]. This broader perspective recognises the existence of diverse illegal structures and the significance of flexible and adaptable criminal networks involved in activities such as human smuggling and cybercrime.

The methodological significance of defining these groups – organised crime groups vs street gangs, US vs UK perspectives – resides in the distinct approaches and frameworks utilised by researchers and law enforcement agencies in each jurisdiction. Consequently, legal definitions of criminal networks, activities, and responses to organised crime vary. These variations affect the operational strategies employed by law enforcement agencies. ROCUs, the NCA, and other police forces that deal with these crimes target ‘serious and organised crime’ offenders due to the UK’s inclusive definition. Specifically, ‘serious and organised crime’ refers to criminal activities planned, coordinated, and carried out by individuals who continue to collaborate. ‘Organised’ criminal groups can maintain their position through the use of violence and corruption; however, the definition of the group component is vague and allows for a wide range of criminal activities to be included, from drug trafficking and smuggling to cybercrime, financial crime and human trafficking, among others. The distinguishing characteristics are the group and collaborative nature of the criminal activity and the severe threat to public safety and security. The ‘serious’ criterion is consistent with the framework established by the Serious Crime Act of 2015, which states that an offence is serious if it involves conduct punishable by a sentence of seven years or more, consists of the use of violence, results in substantial financial gain or is conducted by a large number of individuals for a common purpose.

As the present study is conducted in the United Kingdom, we adopt the definition of group crime and assume that non-crime locations are utilised by serious and organised crime offenders who, as targets of ROCUs, are very likely habitual and serious criminal

careerists, whether operating within organised crime groups or street gangs. Thus, to fill the existing gaps in the literature, we find it suitable to investigate non-crime locations where serious and organised crime offenders may be found. The underlying assumption is that criminal groups have enduring relationships among their members and that these social interactions have spatial and temporal dimensions. Notably, access to valid and reliable data is the most concerning issue in this field of research, as the police do not systematically map or prioritise proactive police activities in the non-crime locations where offenders socialise.

3. Methods

We conducted a cross-sectional electronic survey of all law enforcement officers in the West Midlands directly tasked with collecting intelligence on serious and organised crime offenders and their activities. The data were used to identify non-crime locations. All participants consented to the survey, which the West Midlands ROCU research committee approved. Given the need for sampled population members to protect their identities, we could not ask personal and questions about the background of the respondents, including their sociodemographic characteristics, professional experiences and assigned police units. We address these limitations below.

Research setting. The West Midlands is a metropolitan county in central England. The region consists of seven cities, including Birmingham, the second-largest city in England and Wales.

Participants and procedures. We contacted police officers who managed intelligence units in the West Midlands and requested their participation in the study. We could not ascertain the number of officers in charge of serious and organised crime groups because their behaviour is subject to multiple jurisdictions, including local neighbourhood police officers, detectives, and specialised units. As we noted earlier, serious and organised crime is a broad concept with no universally accepted definition [97]. Therefore, we applied the 'official' definition of serious and organised crime, which includes offenders as individuals involved in serious or multiple child sexual exploitation and abuse, illegal drugs and firearms, economic crimes (including fraud and money laundering), bribery and corruption, organised immigration crime, modern slavery and human trafficking or cybercrime [22].

It is essential to note that while certain officers are actively tasked with collecting intelligence on organised and serious criminals, all police officers may have opportunities to gather related evidence and data on serious and organised crime groups. Variations in policing tasks also exist regarding intelligence collection methods and multi-agency participation. Therefore, the social network of 'intelligence officers' is vast, while a clear description of the population from which our sample was drawn is lacking.

More broadly, however, we can say that similar to other large law enforcement agencies worldwide, the participating police units maintain specialised groups of officers to address the complex issue of organised and serious crime. The members of this population of intelligence officers exhibit notable characteristics, frequently characterised by a distinct combination of abilities and attributes that have been developed to handle the complexities associated with their responsibilities effectively. Specialised training is a fundamental requirement for aspiring officers in this field; The training enables individuals to effectively acquire, evaluate, and disseminate intelligence, embracing diverse competencies, including surveillance methodologies – content beyond the training ordinary constables receive [98]. The responsibilities associated with such positions necessitate analytical capabilities: distinguishing trends, making predictions about future criminal behaviours, and spotting dangers from extensive data sets requires an analytical mindset.

Furthermore, maintaining confidentiality and integrity is paramount given their activities' secret and occasionally clandestine nature. Officers who work in this policing area are often vetted through their organisations, and special clearance must be obtained before officers can be exposed to sensitive information, which can often include names of assets, operatives, and planned activities to disrupt organised and serious crime [99].

It is crucial to underscore the sensitivity associated with the professional roles held by the participants. The disclosure of even aggregated demographic data has the potential to mistakenly expose professionals to risks or undermine the confidentiality of their participation in this study. Therefore, we consciously abstained from gathering personal or demographic data that could potentially be utilised, either independently or in combination with other information, to ascertain the identities of individual participants. The decision aligns with ethical principles pertaining to researching vulnerable populations, particularly when the dissemination of information has the potential to compromise their safety or professional positions [100]. Moreover, the police was unwilling to approve contact with the officers unless data points that could potentially disclose the participants were removed from the study instrument.

Intelligence personnel frequently operate in environments that necessitate increased discretion, and any potential violation of this principle could result in significant consequences. Maintaining anonymity dictated the questions we were allowed to ask our participants. We were not permitted to collect information on their position in the police, to which intelligence units they belong, or their job description. This limitation does not allow us to look at subgroups of respondents based on these characteristics and whether police officers with varying experiences perceive non-crime locations differently – an issue that future research should address. Thus, we cannot state the extent to which those who completed the survey were representative of the total population because no data are available on those who met the eligibility criteria but did not complete the survey.

However, we employed two primary inclusion criteria. First, participants had to be law enforcement professionals employed by the police in an intelligence or operational role which involved addressing organised crime groups operating at a local, regional, or national level. By doing so, we could only generalise about gangs and organised crime groups as defined by UK law. While we appreciate that other criminals may frequent these non-crime locations, conclusions on such populations would be speculative. Second, participants must have worked in organised crime for at least 12 months. This was to ensure that the respondents understood the locations used by organised crime groups to further their criminality. Thus, all that we can say, is that from a list of 424 eligible individuals, 276 (65.09 %) completed the survey.

Instrument. The survey can be found in the Supplementary Material. It includes multiple Likert scale questions and direct, open-

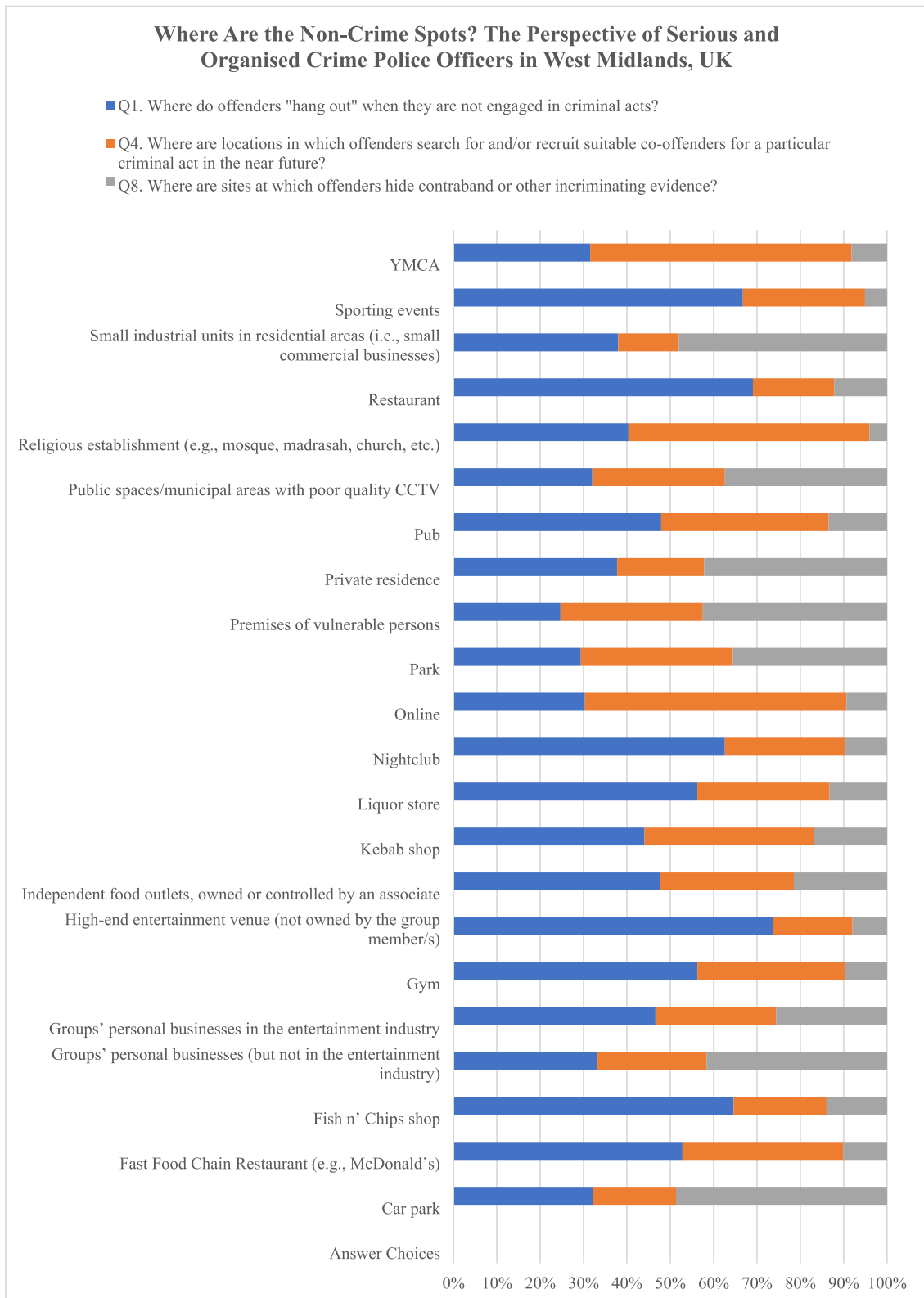


Fig. 1. Locations that might attract repeat offenders? The Perspective of Serious and Organised Crime Police Officers in West Midlands, UK.

ended questions about three types of non-crime locations.

- Q1. Where do offenders ‘hang out’ when not committing a crime?
- Q2. Where do offenders find potential co-offenders?
- Q3. Where do offenders conceal contraband?

Analytical approach. Given the non-random sample and exploratory nature of this research, we used descriptive statistics to illustrate the responses of intelligence officers. Two coders were employed to categorise the open-ended responses, which resulted in 43 discrete non-crime locations. In cases of disagreement, a third investigator assisted in interpreting the results. When appropriate, we also assessed differences between groups using tests for significance, including analysis of variances and Tukey’s honestly significant difference test (HSD) for subgroup analyses.

The collected open text data underwent preliminary cleaning to remove stop words (common words with no significant meaning such as ‘and’, ‘the’ and ‘is’), punctuation and other irrelevant characters. We also performed stemming and lemmatisation, which involved reducing words to their root or base form (from ‘running’ to ‘run’). Word maps were created where the frequency of each keyword in the data determined the size of each word on the map. Words that appeared more often were rendered larger than those that appeared less often. The resulting word maps visually represented the most frequently occurring terms in the data set.

4. Results

Overall, respondents stated that offenders frequented predictable non-crime locations. With notable exceptions such as the premises of lower-level offenders and businesses owned by some organised crime groups, the locations where organised criminals ‘hang out’ are primarily indistinguishable from non-criminal spots. These establishments, facilities and public and private places are where the offenders congregate socially, anticipate finding known and new co-offenders or hide their contraband, usually in plain sight [101], among the law-abiding public. Most officers exposed to intelligence (55.2 %) believed that the offenders rotate among the non-crime locations named by the officers. The officers could identify types of establishments and specific facilities directly linked to gangs or organised crime groups (Figs. 2, 3 and 4).

Hangout Spots. According to the officers, offenders’ routines seem similar to those of normative young to middle-aged males. When not engaged in crime, they can be found in private residences (56 %) or at food outlets and fast-food chains (50 %). They have a particular affinity for kebab shops (20 %) but also frequent fish and chip shops (13 %) and other restaurants (16 %). They also go to nightclubs (39 %) and other high-end entertainment venues owned by associates (35 %) or non-associates (18 %). They also meet their friends at public parks (33 %). More than any other type of venue, however, organised crime groups and gang members in the West Midlands converge at gyms (72 %).

Recruitment spots: More than 80 % of the respondents reported that offenders can count on finding other co-offenders in a given location. Besides recruiting co-conspirators within the vicinity of vulnerable persons (51 %), the responses indicated that recruitment could occur anywhere, such as at the gym (43 %), in parks and in public spaces with poor-quality closed-circuit television surveillance (CCTV) (75 %), and restaurants of all kinds. Approximately one-third of the respondents mentioned Internet forums as places to locate offenders who may commit a particular criminal act shortly.

Contraband hideout spots: All participants (100 %) believed that contraband or other incriminating evidence is hidden near vulnerable persons or lower-level offenders (62 %). Private residences are also commonly used for this purpose (60 %). Other locations in the public domain include public places with poor-quality CCTV (60 %), parks (40 %), car parks (28 %) and street corners and open spaces (73 %).

4.1. Are non-crime locations considered safe?

Using the survey data, we sought to explore the degree to which respondents believed that criminals were concerned about



Fig. 2. Where do offenders ‘hang out’ when not engaged in crime? A word map for the top three spots identified by police officers, based on free text (n = 119 responses).

different forms of police activity at non-crime locations (see Fig. 1). Specifically, participants were asked to rank (on a scale of 1 = not at all, to 5 = most significantly) the extent to which they thought members of criminal organisations were concerned about police surveillance, CCTV and automated number plate recognition (ANPR) at each of the three types of non-crime locations identified (hangout spots, recruitment spots and contraband hideout spots).

The overall level of concern among criminals appears to be somewhat low since the average rank was below three for each police tactic at each type of non-crime location. Overall, the police tactic believed to cause the most significant concern among criminals was police surveillance, followed by CCTV and then ANPR, with statistically significant differences between the three types of tactics across the three types of non-crime locations [hangout spots $F(2, 383) = 10.424, p < 0.001$; Tukey's HSD post hoc tests: (surveillance vs CCTV: difference = $-0.3154, p = 0.1137$); (surveillance vs ANPR: difference = $-0.7185, p = 0.0000$); (CCTV vs ANPR: difference = $-0.4031, p = 0.0291$)], [recruitment spots $F(2, 327) = 5.489, p < 0.05$; Tukey's HSD post hoc tests: (surveillance vs CCTV: difference = $-0.1455, p = 0.6700$); (surveillance vs ANPR: difference = $-0.5455, p = 0.0043$); (CCTV vs ANPR: difference = $-0.4000, p = 0.0510$)] [contraband hideout spots $F(2, 294) = 7.0782, p < 0.05$; Tukey's HSD post hoc tests: (surveillance vs CCTV: difference = $-0.2021, p = 0.5291$); (surveillance vs ANPR: difference = $-0.6869, p = 0.0009$); (CCTV vs ANPR: difference = $-0.9267, p = 0.0276$)].

This result is unsurprising since surveillance is covert and provides more extensive coverage of human activity than either CCTV or ANPR. Furthermore, CCTV and ANPR are predictable, whereas surveillance is more hidden. Notably, this overall low level of concern is similar across all three types of non-crime locations. This may explain why criminals often use the same location for all three purposes (Table 1).

4.2. Observable patterns at non-crime locations

Respondents were then asked to describe any observed patterns influencing behaviour at or between non-crime locations. Out of the 89 respondents who considered this issue, 75 identified eight behavioural patterns (Table 2). First, respondents believed that the proximity of the non-crime locations is linked to the type of crime. For example, there are often links between the street-level dealing of lower quantities of drugs – particularly Class A drugs (e.g. heroin, methadone, crack cocaine) – in open spaces and the locations of firearm concealment. This does not usually apply to stolen commodities.

Participants also believed offenders capitalise on poor socioeconomic conditions to recruit new members and exploit lower-level offenders and vulnerable persons in these neighbourhoods by using them to store or hide firearms in open spaces and motor vehicles. However, this is primarily a task left to lower-ranked members of an organised crime group, while the significant and principal members remain isolated from these processes [102]. These incidents are juxtaposed mainly with the drug trade, the most noticeable trend in the data.

5. Discussion

Based on the survey results, intelligence officers in the West Midlands can identify non-crime locations where criminals congregate when they are not actively committing crimes (socialising, recruiting accomplices or concealing contraband). While some locations are 'generic' and are shared by offenders and uninvolved civilians – i.e., fast food restaurants, parking lots, gyms, and nightclubs – roughly one-third are believed by the officers to be explicitly associated with or utilised by criminals (Fig. 1). Based on the officers' responses, these properties are owned directly by criminal accomplices or vulnerable individuals exploited by criminals. Officers also told us that these locations can be used to pursue known criminals. Based on these findings, we enhance our understanding of routine criminal activities and crime patterns and then consider new strategic situational crime prevention initiatives.

5.1. A focus beyond the 'two points' approach to the criminal journey

According to the surveyed officers, serious and organised crime offenders tend to socialise in gyms and restaurants, conceal contraband near vulnerable individuals, and recruit other criminals at any location. These non-crime locations complements the



Fig. 3. Where do offenders search for suitable co-offenders? A word map for the top three spots identified by police officers, based on free text (n = 94 responses).



Fig. 4. Where do offenders hide contraband? A word map for the top three spots identified by police officers, based on free text (n = 87 responses).

Table 1

‘To What Extent Do You Think Offenders are Concerned about the Following Police Tactics?’ – Intelligence Officers’ Assessment of Serious and Organised Crime Group Offenders’ Views on Police Surveillance, CCTV, and ANPR (Scale 1–5).

Police Tactic	Hangout Spots	Recruitment Spots	Contraband Hideout Spots	F
Police surveillance	2.680 (1.414) [^]	2.418 (1.410)	2.586 (1.471)	10.424***
CCTV	2.364 (1.287)	2.273 (1.263)	2.384 (1.353)	5.489**
ANPR	1.961 (1.071)	1.873 (1.101)	1.899 (1.111)	7.0782**

*p < 0.10; **p < 0.05; ***p < 0.01; [^] in parentheses – standard deviations.

Table 2

Observed non-crime location patterns.

Observed convergence pattern	Number of respondents
The spatial proximity of non-crime locations and contraband sites is closer for street-level drug dealing in open spaces where the drug quantities are lower.	22
The spatial proximity of convergence and contraband sites is higher for Class A drugs than for Class C drugs ^a .	17
The spatial spread of convergence and contraband sites is higher for weapons than other commodities since criminals must be able to access weapons quickly for self-protection.	12
Organised criminals exploit lower-level group members and force them to store firearms for the group.	8
Firearms are stored in open spaces or vehicles near offenders’ addresses to reduce the risk of capture.	8
Locations with poor socioeconomic conditions, education and employment opportunities are breeding grounds for organised crime convergence.	7
Convergence is more prevalent among low-ranking group members since the leading players keep themselves isolated from the wider group.	5
The spatial proximity of convergence and contraband sites is greater when low-level group members are required to utilise rail networks for drug dealing across county lines.	4
We do not understand how organised criminals operate; organised crime is too broad to be generalised.	6

^a In the United Kingdom, drugs are classified into three categories under the Misuse of Drugs Act 1971: Class A, Class B, and Class C. Each class represents a different level of perceived harm and is subject to different penalties for offences such as possession and trafficking, for example Class A drugs in the UK include substances like heroin, cocaine, methamphetamine, methadone, ecstasy (MDMA), LSD, and magic mushrooms; Class B drugs include amphetamines, cannabis, methylphenidate (Ritalin), synthetic cannabinoids, pholcodine, and ketamine; and Class C drugs include benzodiazepines (like diazepam), anabolic steroids, GHB, and some tranquilisers.

‘activity fields’ posited by earlier research on crime patterns. Brantingham and Brantingham [58] assumed that, within zones, offenders could be located at crime scenes, in their residences, or between these two locations. We demonstrate that non-crime locations are significant nodes: these are places where criminals may plan crimes, conceal contraband, and socialise. Notably, such locations are not on the direct path to crime, but they are part of the ‘journey’ in the loose sense of the word. For instance, our findings indicate that contraband storage sites are carefully chosen to minimise the risk of apprehension and impede the ability of law enforcement to conduct sting operations. This may explain the lack of concern that police officers reported observing among criminals at non-crime locations. Nonetheless, this suggests that non-crime locations may have characteristics distinct from known crime hotspots [8].

In addition, participants believe that criminals spend time in gyms, which may provide a sociobiological explanation for crime [103] and an identified type of location that practitioners could target more determinedly. Indeed, while most gym-goers are not members of organised crime groups, it appears that some are. In light of this, it would be interesting to examine all gyms in the West Midlands and determine if the types of gyms frequented by criminals differ from those not believed to be frequented by criminals. Systematic differences in location, clientele, type of gym, membership fees, etc., will likely yield insights relevant to police practice.

As gyms, clubs, and bars emerge as typical venues, we should note that this likely reflects a demographic found in most offender

groups: young men. However, the critical distinction is that our offender population – organised crime offenders – are not young men [102]; these are career offenders. They are not street offenders who may fit the ‘young men’ profile, so to find them in these places where young men congregate seems significant when considering the routines of seasoned criminals.

5.2. Targeting non-crime locations

5.2.1. Pros: proactive policing and new spatial targets

The findings provide a rationale for adopting systematic crime prevention in areas where serious and organised criminals congregate, recruit, and store contraband. Since many locations are used for all three purposes, such a plan could enable the police to identify complementary tactics to disrupt criminal activity on the premises, apprehend those possessing drugs and firearms and divert exploited young offenders to prevention-based programmes [104]. Therefore, the findings of this study should be considered alongside pre-existing methods to maximise the efficacy of policing strategies designed to combat serious and organised crime.

Proactive policing. Different types of non-crime locations may require different sets of proactive policing initiatives. The strategies used to reduce crime and disorder at restaurants, entertainment venues, and public spaces must consider the presence of uninvolved civilians and vulnerable individuals. It is also important to note that most non-crime locations used by serious and organised crime offenders are indoors, meaning that standard patrols are unlikely to have the desired effect on crime suppression or intelligence gathering. Instead of this, alternative crime control mechanisms should be considered, such as problem-oriented policing [105,106], community engagement [107] and other ‘high policing’ interventions [108,109]. We advocate for additional research on police interventions, preferably controlled experiments on cost-effectiveness, to evaluate their impact on non-crime locations.

In addition, organised criminals may exploit young offenders from disadvantaged backgrounds, compelling them to store contraband and deal drugs in areas plagued by poor education and unemployment. The shared histories and social ties developed by adolescents during their formative years may lead to their exploitation by organised criminals before they become members of these crime groups. In addition, the more senior criminals may serve as role models for future generations for whom organised crime is the only available path to economic success [110,111]. All respondents suggested that low-level offenders and vulnerable individuals are used for concealing weapons and contraband. As a result, the findings provide an opportunity to pinpoint the location of the vulnerability.

New spatial targets. Some locations have been identified as having direct ties to organised crime group offenders. Approximately 28.4 % of the officers identified non-crime locations as the primary factor leading to the organisation of criminal groups, which leads us to speculate that police intelligence should be reviewed to determine if there are meaningful opportunities to adopt crime prevention tactics and, if so, which locations should be prioritised.

For example, focusing on non-crime locations and relying on non-police agents of social control has practical significance. The majority of identified non-crime locations are managed privately. Place management [112], private security [113] and urban planners [114] are examples of non-police actors who manage facilities that are essentially non-crime locations and whose efforts have been demonstrated to reduce crime in these locations. Working with and mobilising these non-police actors is a crucial avenue to investigate when contemplating opportunities for organised crime prevention and disruption. Consequently, focusing on these non-crime locations will elicit pre-existing multi-agency activities across public bodies and the volunteer sector to discourage crime through competent guardianship [115].

5.2.2. Cons: unintended consequences of increased surveillance in areas devoid of criminal activity

We see benefits in applying proactive policing and identifying a new set of appropriate targets. However, there are risks associated with this approach as well, given the possibility of excessive policing and the violation of civil liberties through increased police attention to non-crime locations [1,3,21].

Intelligence collection frequently involves a degree of surveillance, which can invade individuals’ privacy. This could be perceived as a rights violation, particularly in areas unrelated to direct criminal activity. Marx [116] argues that surveillance measures can be counterproductive when they infringe upon personal freedoms and civil liberties, especially without a clear and legally justifiable reason. When an imminent threat or ongoing investigation necessitates the proportionate application of such measures, the potential violation of civil liberties may be defensible. However, it is frequently challenging to draw a clear line between what is permissible and what is excessive use of specific surveillance instruments, particularly when individuals targeted based on their past criminal involvement feel they are under perpetual suspicion, which can lead to feelings of alienation, resentment and the illegitimacy of law enforcement agencies.

In addition, as regular citizens frequent these non-criminal locations, their rights may be inadvertently violated. People have a reasonable expectation of privacy in public spaces. This includes not being subjected to unjustified surveillance; when police conduct surveillance targeting criminal elements in these non-crime locations, bystanders are inevitably subjected to the same measures [117]. This may be interpreted as an unwarranted intrusion into private lives, causing discomfort or distress.

Similarly, when the police attempt to pinpoint potential co-offenders in these non-crime locations, they can misinterpret or misidentify individuals in the spatiotemporal vicinity of the targeted offenders who are not involved in criminal activity. Typical daily activities may be misinterpreted as suspicious or illegal behaviour. This can result in unnecessary interactions with law enforcement. In this context, using advanced surveillance technologies such as facial recognition or big data analytics raises data privacy concerns. Innocent people caught in the surveillance dragnet may have their images or data collected, stored and analysed [118]. This may result in the misuse of personal information and data privacy breaches.

Finally, Penney [119] identifies a ‘chilling effect’, in which individuals modify their behaviour in response to the perception that

they are being watched, as a negative consequence of police activity in areas not prone to crime. People may refrain from legal self-expression and behaviour for fear of attracting unwanted attention or suspicion. This can restrict the freedom and enjoyment of public spaces in general.

The chilling effect may be exacerbated if non-crime locations are associated with marginalised groups due to intersectionality-based social stigmatisation and discrimination. Bottoms and Tankebe [120] and Bradford et al. [121] argue that when police collection is concentrated in particular areas or communities, especially in disadvantaged or minority-dominated areas, it may perpetuate stereotypes and social exclusion. For instance, if members of a specific demographic are routinely targeted for intelligence gathering due to frequenting particular locations, this could lead to perceptions of profiling and bias, escalating tensions between those communities and law enforcement. This stigmatisation can have profound psychological effects on the targeted individuals and foster a culture of fear and mistrust.

5.3. Further research implications

We are perplexed by two locations that police officers did not identify: (a) prisons or rehabilitation facilities and (b) the residences of current or former romantic partners. One possible explanation is that the security measures at prisons and the fear of police activity at romantic partners' premises serve as an effective deterrent. However, this contradicts previous understandings of where offenders may find suitable partners or safe havens [122,123]. It is possible, but unlikely, given the emphasis on rehabilitation in prisons and the lifetime offender management approach, that police officers are not sufficiently exposed to intelligence gathered in prisons or that organised crime groups and gang intelligence officers are not shown information on the personal affairs of offenders. Similarly, organised crime group offenders may know better than to conceal their goods at their residences or at that of their partners.

Thus, we call for more research on these non-crime locations, particularly on validating the survey results through additional information sources, given the inherent limitations of the survey methodology. We caution that validating survey results, particularly those obtained from intelligence officers in sensitive positions, is a formidable challenge. Nevertheless, some methods can be implemented to enhance the validity of the survey results. For example, it is possible to do a comparative analysis between the crime locations mentioned by survey respondents and publicly accessible crime data, news articles, or other pertinent literature. A substantial overlap or consistency between these sources and the survey results can enhance the credibility of the findings [124,125].

Another aspect to consider is the validation of experts. Incorporating the expertise of impartial specialists with an understanding of crime and intelligence can offer an external validation of research outcomes. These specialists possess the expertise and knowledge to evaluate the credibility and coherence of the crime locations mentioned in the survey, taking into account their experience and awareness of the region or the characteristics of the alleged crimes. The feedback provided by individuals can be utilised to validate a study's conclusions qualitatively. Finally, it might be possible to conduct field observations in the form of on-site visits to selected crime locations, where safety and practicality permit, in order to observe and collect further data. The inclusion of anecdotal evidence or observational data obtained from these visits can enhance the credibility and robustness of the research conclusions [126].

6. Limitations

6.1. Using officers' perceptions as opposed to direct measurements of offenders' behaviour

The methodological elephant in the room is the interpretation of survey data from law enforcement officers as indicative of unfiltered, accurate information about the actual behavioural patterns of suspects. The data are survey data, but we interpret the information officers report as indicators of offenders' conduct without confirmed validity. These issues are detailed below, with some partial conceptual and methodological solutions.

Subjectivity and bias. The inherent subjectivity and possible prejudice of respondents are among the most significant methodological limitations of the survey. The responses of police officers to a survey about non-crime locations are influenced by their unique experiences, personal biases and perceptions. Due to their concentrated exposure, officers primarily working in a high-crime area may overestimate the prevalence of crime there [127]. In contrast, if an intelligence officer has limited exposure to a particular crime or location, they are likelier to underestimate its significance. Like bias, similarity can also manifest as stereotyping, as officers harbour negative stereotypes about a specific group [128]. In such a case, they may exaggerate the prevalence of locations where offenders of a particular minority are searching for suitable co-offenders when such individuals are not present in non-crime locations. This unconscious bias can lead to distorted representations of the spatiotemporal characteristics of crime, which may result in biased policing practices.

Thus, the research findings have limited generalisability beyond the context in which the data were collected [129]. A survey of police officers regarding crime spots can only provide a partial picture of crime, and officers can only provide information on crimes and locations of which they are aware [130]. Even if we collect evidence from police records, unidentified locations remain [131]. The accuracy and validity of the police officers' statements may be suspect [132]. This may be even more problematic in organised crime, where perpetrators are likely to be sophisticated players with a primary objective to avoid detection [133–136]. Consequently, the phenomenon's true scope may remain unknown.

Restricted Representation. Typically, surveys are conducted on a representative sample with results extrapolated to an entire population. However, results may only be generalisable if the sample of police officers surveyed is representative of the larger police officer population. This issue is of particular concern in our research. The findings may not apply to officers in rural areas, offenders who do not fall under the remit of ROCU or NCA, or jurisdictions with significantly different crime patterns. The survey primarily elicited

responses from intelligence officers who deal with serious and organised crime in the West Midlands of the United Kingdom. Since we focused on serious and organised crime offenders, we can only generalise our findings to similar offender groups. Solo offenders are also expected to congregate in specific locations, which was beyond this study's scope, so we did not dedicate our research to these criminals.

As we explained in the method section, we have no access to any identifying information of the officers due to sensitivity concerns, so we are unable to characterise the sociodemographic or professional composition of participants or the types of crimes or groups they have encountered. These experiences and perceptions of crime locations may differ significantly from officers in other settings [137]. The prioritisation of participant safety and anonymity was of utmost importance to us, and it served as a guiding principle throughout the data-gathering procedure –we encourage future studies to find ways to ask questions about the characteristics of the intelligence officers without sacrificing personal safety and anonymity.

Similarly, we cannot determine the composition of the criminals because we did not collect such information. Previous studies utilising ROCU data [102] provide some indications of these variables. Still, we cannot dissect our data based on specific ages or backgrounds to differentiate offender groups congregating in various non-crime locations.

The dynamic nature of crime, as revealed by a cross-sectional study, is limited. Criminal behaviour is intricate and vibrant. Changes to societal norms, technology, economic conditions and law enforcement strategies can significantly alter crime patterns over time [115]. A survey provides only a snapshot of the perceptions of crime at a given point. For instance, a location identified as a hangout spot today may not hold the same status in six months if interventions to reduce crime are implemented, or changes in criminal activity patterns occur. In this regard, criminals do not operate in a vacuum; they respond to environmental changes, including law enforcement strategies. Therefore, if police begin to focus on a specific location identified as a recruitment spot or a place where criminals hide contraband, criminals may move to avoid detection, a phenomenon known as displacement [138]. While places have inherent characteristics that attract active offenders, offenders may move between locations if one becomes too dangerous.

6.2. Do not throw the baby out with the bathwater

Despite these shortcomings, our findings are still valid; the non-crime locations identified in this study are the locations police could still routinely target in their fight against serious and organised crime in the area. If they are mistaken about the precision and accuracy of their perceptions, this is a problem in and of itself, not a methodological bias.

Concerning the formulation of reliable criminogenic indicators, the absence of objective verification of the data on non-crime locations and the difficulty separating locations from unique characteristics of the surrounding neighbourhood needs to be revised. Yet, our study provides a conceptual and methodological solution to a generally understudied area due to a need for valid and reliable assessment of non-crime locations. It is challenging to obtain stratified pools of serious and organised crime group offenders, much less a probability sample that can be considered representative of the criminal population. Therefore, despite the methodological obstacles, police officers provide the optimal source for a granular understanding of non-crime locations and deserve further investigation. Like physicians, engineers or therapists, police officers retain knowledge of patterns and behaviours. Their daily interactions with offenders, specifically with the non-crime locations identified in this paper, continue to serve as a valuable foundation of information. Over a lengthy period, a seasoned officer can single-handedly determine the number of non-crime-related locations frequented by multiple criminal groups, making their perspective valuable, albeit not 100 % accurate. This body of knowledge provides more information on offenders' routines than any other data source, including those who lack a holistic perspective. With more research and with diversified samples, we could corroborate or debunk these conclusions.

7. Data availability statement

The data utilised in this research were obtained through questionnaires administered to police intelligence officers. Due to the sensitive nature of the information and the risks involved for both the officers and their sources, our partner agency, ROCU, has imposed strict confidentiality requirements. In accordance with these directives and to ensure the safety and integrity of the officers and their operations, we are unable to release the data publicly. This decision aligns with our dedication to ethical research practices and safeguarding sensitive information. Hence, while the study offers comprehensive analyses and insights based on the data, the raw data will not be accessible to the public due to these considerations.

Ethics Statement

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2. The study was approved by the United Kingdom National Serious and Organised Crime Strategy Ethics Panel, December 2, 2014. Informed consent was obtained from the participants.

CRedit authorship contribution statement

John Denley: Writing – original draft, Project administration, Investigation, Conceptualization. **Barak Ariel:** Writing – review & editing, Visualization, Supervision, Formal analysis. **Marcus Felson:** Writing – original draft, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.heliyon.2023.e23385>.

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