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RESEARCH ARTICLE

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The crime and the place: Robbery in the night-time economy

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Abstract

The night-time economy (NTE) provides many opportunities for crime as there is an abundance of potential victims who are often intoxicated and clustered in a small geographical area. Previous research on NTE violence has primarily focused on assault. However, other offences are also common, such as robbery. This study focused on NTE-related robbery using police recorded crime data relating to 1624 personal robberies (including attempts) from West Midlands Police, UK. The data was binary coded to identify and compare offence characteristics. Robbery offences in the NTE showed unique characteristics compared to robberies unrelated to this context. In particular, there were differences in alcohol, use of violence, injuries, approach style and crime locations. The findings of the current research align with theoretical frameworks from environmental criminology (e.g. crime generators and attractors), have implications for crime prevention and investigations and can feed into developing policing strategies that take into account the background context for offending.

KEYWORDS
mugging, night-time economy, offence characteristics, robbery, street crime

1 | INTRODUCTION

1.1 | Crime and place

According to Routine Activity Theory (Clarke & Felson, 1993), crime emerges through 'interactions of potential offenders with potential targets in settings that make doing the crime easy, safe and profitable' (Brantingham & Brantingham, 1995, p. 5). One way to conceptualise this is using the Crime Triangle (Clarke & Eck, 2003) which posits that crime occurs when (1) a motivated offender, (2) a suitable victim and (3) a lack of capable guardianship converge in time and space. Crime can therefore be seen as a product of the interaction between different situational factors (e.g. a lack of security in a place with a high number of targets providing opportunities to offend) and how these influence the offender's behaviours (such as an increased use of protective measures like wearing masks during daytime). For example, in street robbery, this occurs when 'motivated offenders encounter suitable victims in an environment that facilitates robbery' (Monk et al., 2010, p. 10). The frequency of a given crime occurring also varies over time—for example, commercial robbery has been found to peak in the winter when hours of daylight are lower (van Koppen & Jansen, 1999). Similarly, hours of darkness have been identified as a predictor for when street robbery occurs (Tompson & Bowers, 2013).

Exploring the spatio-temporal dynamics of an offence is important for understanding how it is manifested in a society. Research has found, for example, that robbery is more highly concentrated around malls and busy shopping areas (Brantingham & Brantingham, 1995) as well as around main roads, stations and local centres (Ceccato & Oberwittler, 2008). These locations with a higher frequency of crimes are called crime 'hotspots' (Brantingham & Brantingham, 1984) and are often situated on major pathways connecting the various travel nodes people pass on their routine activities (Brantingham & Brantingham, 1995). Other crime hotspots include bus stops (Hart & Miethe, 2014) and public places that show a significant lack of surveillance and security (Ceccato & Oberwittler, 2008; Hart & Miethe, 2014). Hotspots are further influenced by temporal factors—for example, locations such as bus stops and train stations may only be 'hot' at specific times (e.g. when there is a certain amount of traffic) (Brantingham & Brantingham, 1995; Hart & Miethe, 2014). Robbery, therefore, is not constant as the attributes that make a place attractive to robbers will vary over time. As Bernasco et al. (2016) note, a place which presents a good target for robbers late at night due to an abundance of intoxicated people might be less attractive during the day when people are rushing to and from work.

Crime hotspots emerge when activity nodes attract a large number of people to them (sometimes at specific times), creating settings conductive to criminality (Kinney et al., 2008). These locations can act as crime generators as they provide people who notice criminal opportunities with a range of possible targets (Brantingham & Brantingham, 1993). If an area becomes well-known for providing good opportunities for crime, they often attract other individuals who show a high level of criminal motivation, turning these areas into crime attractors (Brantingham & Brantingham, 1993). Any situational factors that facilitate crime to happen (e.g. poor security measures and good escape routes) can also act as crime enablers (Brantingham & Brantingham, 1995).

1.2 | Night-time economy

The night-time economy (NTE)—i.e. economic activity that takes place between 18:00 and 06:00 (University of Gloucestershire, 2018; Wickham, 2012)—is one example of an environment with both spatial and temporal elements that can transform it into a crime attractor or generator (Cozens & Grieve, 2011), especially if lots of venues are clustered geographically (Liu et al., 2022). From a routine activities perspective, NTE venues, such as bars and nightclubs, are hotspots because they provide an opportunity for motivated offenders and suitable targets to come together in the absence of capable guardians (Roncek & Maier, 1991) (if there is, for example, a lack of appropriate door supervision), and previous research has found that NTE clusters around relatively few venues (Finney, 2004). Nightclub venues have been identified as places where women report sexual assault (such as grabbing breasts) as commonplace

(Anitha et al., 2021) and where violent assault and robbery can occur (Burrell & Erol, 2009; Finney, 2004; Philpot et al., 2019). However, although pubs and clubs are a focal point for much research, such types of violence associated with the NTE do not always occur inside venues but outside on the street (Hadfield, 2006). In fact, Porter (2015) reported that one in five violent incidents occur in (or directly around) drinking venues and pubs are well-established in the literature as crime attractors (e.g. Cozens & Grieve, 2011; Liu et al., 2022). They are often located in close proximity to each other (Liu et al., 2022) along with takeaways and other services (such as taxis) to create an NTE environment. This NTE environment records high levels of crime and disorder (Hadfield, 2006; Liebst et al., 2019; Wilkinson et al., 2016). For example, Winlow and Hall (2006) found that NTE incidents outnumbered daytime incidents by three to one. In the UK, many venues associated with the NTE (e.g. licenced premises) are open throughout the day but get busier in the late afternoon (e.g. after-work drinks) and evening (especially as nightclubs open). Thus, although the temporal span of the NTE is commonly cited as 18:00–06:00 in the literature (e.g. Tomsen, 2018; University of Gloucestershire, 2018; Wickham, 2012), it is not surprising that research has shown that violence and disorder tends to cluster between 23:00 and 03:00 on Friday and Saturday nights (Budd et al., 2003; Finney, 2004).

NTE violence and alcohol-related violence are often considered synonymous as they co-occur so frequently (Burrell & Erol, 2009) and alcohol is a key feature of the NTE (e.g. Cozens & Grieve, 2011; Hobbs et al., 2003). Furthermore, research has shown that offender and/or victim drinking is associated with a high proportion of NTE assaults—for example, Hutchinson et al. (1998) reported that at least 90% of assaults in bars involved the offender and/or victim drinking in the 4 h prior to the incident. Furthermore, the NTE is often dominated by young people as patrons (Hobbs et al., 2003). The links between alcohol and violence (Finney, 2004) and correlations between young people and violence (e.g. personal robbery victims and offenders are both often young; Burrell, 2022) are both clearly manifested in the NTE space which provides an opportunity for crime to occur. Alcohol can also create vulnerable potential victims, including robbery targets (Roncek & Maier, 1991).

The link between drinking venues and violence has also been established across cultures (Savard et al., 2019). This is a concern for the public (Tomsen, 2018) as approximately 50% of all public violent incidents in the UK are linked to alcohol (van Amsterdam et al., 2019). Between half and three quarters of the NTE patrons have witnessed NTE violence and 10%–17% have been directly involved (Philpot et al., 2019), which creates a state of anxiety and calls for political and policing reforms (Hobbs et al., 2005; Lister, 2009; Philpot et al., 2019) and so NTE-related violence is a key priority for the police (Burrell & Erol, 2009; Tomsen, 2018).

1.3 | Robbery

One offence that commonly occurs in the NTE is personal robbery, so much so that recent reductions in personal robbery (34% decrease for the year ending March 2021) were partially attributed to the closure of the NTE during COVID-19 lockdowns (Office for National Statistics, 2021). Personal robbery is defined as the theft of property using force or the threat of force (Home Office, 2022). This extends to the theft of motor vehicles where force is used against the victim (e.g. they are forced out of the vehicle and/or to handover car keys at knifepoint) (Home Office, 2022), otherwise known as 'carjacking' (Burrell, 2022). Robbery accounts for around 2% of all police recorded crime every year (England and Wales) (Flatley, 2017). According to the British Crime Survey for England and Wales, males were the offenders in 86% of robberies (Office for National Statistics, 2019). In fact, research has demonstrated that the majority of robberies include male offenders aged between 16 and 39 targeting other men (Alarid et al., 2009; Smith, 2003), although more recent statistics for England and Wales show a 58%:42% male to female split in the victims targeted (Office for National Statistics, 2019).

Co-offending is a common characteristic of robbery offences (Alarid et al., 2009; Burrell, 2022; Smith, 2003; Wüllenweber & Burrell, 2020), with data from the Crime Survey for England and Wales reporting that 41% of robberies were committed by groups of two or more perpetrators in 2017/18 (Office for National Statistics, 2019). Co-offending is particularly associated with night-time offences—for example, Wüllenweber and Burrell (2020) found that 75% of offences by duos and 82% of offences by three or more perpetrators were committed at night-time (18:00–06:00) compared to 68% for lone offenders.

Robbery offences can differ with regard to the approach used to target victims (Goodwill et al., 2012); these can vary from surprise attacks to physical confrontations or blitz attacks. Most commonly though a con approach (e.g. using a coercive strategy to trick the victims into trusting them) is utilised. The level and type of force used will also differ (Luckenbill, 1980). Weapons are used in approximately a quarter of robberies (Office for National Statistics, 2019), most commonly (in around 20% of total cases) knifes or other sharp instruments (Flatley, 2017; Office for National Statistics, 2019). It is perhaps, therefore, not surprising that two-fifths (39%) of victims sustained some kind of injury in 2017/2018, the most common being a bruise/black eye (35% of all cases) (Office for National Statistics, 2019). Being a victim of robbery can also have an emotional impact on the individual (Burrell, 2022; Cook, 1987; Elklit, 2002; Flatley, 2016), with over half of robbery victims left feeling fearful, 46% were angry, 44% annoyed and 42% shocked (Office for National Statistics, 2019). Research by Barker et al. (1993) also reported anger and shock as some of the most frequently experienced emotional responses alongside a feeling of vulnerability or loss of confidence. They further found some people developing more severe anxiety or depression as a result of being victimised (Barker et al., 1993). Some evidence even suggests that the impact can be long lasting (Barker et al., 1993; Gale & Coupe, 2005).

Not only do differences in the offence process exist but, as stated before, the frequency of robbery occurring varies over time and at different locations. For example, Caplan et al. (2020) demonstrated temporality in personal robbery hotspots and associated this with an interaction between physical vulnerabilities of places and social behaviours of people who use these spaces. As stated before, robbery has frequently been linked to the NTE (e.g. Felson et al., 2013), that is, it happens increasingly around late-night entertainment venues, especially pubs and night clubs. Supporting this, studies investigating the influence of time factors on robbery offences have shown that the number of robbery incidents are lowest during the morning and increase throughout the day (Ceccato & Oberwittler, 2008). The reason for this connection can be understood from the spatiotemporal characteristics supporting such NTE-related incidents. Late-night entertainment districts provide the highly busy environment that attract possible offenders and targets, while the dark of the night-time puts the offenders in a state of safety (Tompson & Bowers, 2013).

Robbers also benefit from the circumstances that many individuals enjoying the nightlife are intoxicated, which makes it easier for offenders to overwhelm their victims (Felson et al., 2013; Roncek & Maier, 1991). A 2007 survey of nightlife users showed that 90% of individuals drink significantly more than double the recommended amount on a night out (Hughes et al., 2007), and most of them start drinking before they leave their home (Forsyth, 2010). Research has shown that such drinking patterns are likely to result in alcohol-related violence later in the evening (Hughes et al., 2007) and has linked increased alcohol and substance use to higher levels of violence in general (Goldstein, 2003; Smith et al., 2014). It has also been linked to robbery, as around a quarter of victims perceived the offender(s) had been drinking in the lead up to the offence (Office for National Statistics, 2019). As weapons are used in a third of robbery cases, it is thus likely for a robbery involving alcohol to escalate into a fight that results in grievous bodily harm (Chaplin et al., 2011). It is also not surprising that teenagers and young adults, who are most likely to attend late-night venues, are shown to be at highest risk of victimisation (Fattah, 1991; Flatley, 2017).

For the above reasons, tackling crimes that happen in the NTE is important. Unfortunately, the many crime supporting circumstances in these instances pose a challenge to the police. A big problem caused by intoxicated victims, for example, is that many of them may not remember anything about the assault (White, 2003). With more information on spatio-temporal characteristics that increase the probability of robberies occurring, a more defined outline of the offence process counteracting such crimes will be enhanced. A deeper understanding of the offence process would further be valuable for educational prevention programmes.

1.4 | Current research

The current study is a follow-up from previous research into group offending in the context of robbery offences (Wüllenweber & Burrell, 2020). This study had already found significant differences between daytime and night-time robberies as variables in a group versus lone offence context. Based on these initial findings, and given that robbery

is a crime frequently occurring in the NTE context, it was decided to take the research further to explore differences related to NTE versus non-NTE robberies. The aim of the current study, therefore, is to identify the specific crime characteristics of robberies that occur late at night, in and around pubs, bars, night clubs and other late-night venues, such as takeaways. This aims to identify whether there are particular characteristics that can be targeted with tailored crime prevention tactics. The study will code offender behaviour from police recorded crime data. Such official records can offer a depth of information about offences (Hedlund et al., 2014), including spatial (Burrell & Erol, 2009) and temporal (Philpot et al., 2019) trends. This type of data is argued to be instrumental in the development of evidence-based crime prevention strategies (Braga et al., 2014) and retains ecological validity (Burrell et al., 2012) as it represents what is available to police analysts in a real-world setting. Data from an urbanised area with a large NTE is the focus as towns and cities are where licenced premises are the most densely clustered (Hadfield, 2006).

1.5 | Research question and hypotheses

The main research question addressed in this study is as follows: What are the characteristics of robbery offences committed in the NTE?

Furthermore, in accordance with prior research, the following hypothesis has been formed: There are differences in offence behaviours between NTE-related and non-NTE-related robberies. Specifically:

1. Robberies related to the NTE context are more likely to involve alcohol.
2. As offences related to the NTE are known to be more violent, we expect that this is reflected in robbery offences in the NTE through higher presence of variables associated with violence in NTE than non-NTE crimes, such as the use of force exerted for victim control, use of weapons and injuries sustained by the victim.
3. Night-time economy offences will be more associated with groups of individuals than non-NTE offences.
4. There will be differences in the approach style used by the offenders between the NTE-context and non-NTE robberies.
5. We expect NTE-related crimes to be related to specific NTE-related locations such as takeaways.

2 | METHODS

2.1 | Sample

Anonymised data for all robbery offences (including unsolved cases) committed in Birmingham city centre between 01 January 2011 and 27 February 2017 was provided by West Midlands Police. The sample comprised 1624 offences of personal robbery (including attempts and assaults with the intent to rob).

Suspect data (partial or full, relating to 502 suspects) was available in 309 out of 1624 cases (19%). From this information, it was determined that the majority of suspects (n = 502) were male (n = 453, 90.2%), 48 (9.6%) were female and the gender was not recorded in one case. Suspects were aged between 11 and 52 years at the time of the offence with an average age of 22 years (M = 21.55, SD = 7.39). Where ethnicity was recorded (n = 502), 36.7% (n = 184) were recorded as Black, 23.9% (n = 120) as White and 18.3% (n = 92) as Asian. A further 15.9% (n = 80) of suspects were of another ethnicity and ethnicity was recorded as unknown for 5.2% (n = 26).

There were 1700 victims who had been targeted in groups of one to four individuals. Almost three quarters (n = 1244, 73.2%) were male and 436 (25.6%) were female. Gender was not recorded in 20 (1.2%) of the cases. Victim age ranged from age 6–88 years with an average of 26 years (M = 26.32, SD = 10.92). No age was recorded for four victims. The ethnicity was recorded for the majority of victims (n = 1575, 92.6%). Just under three in five (n = 1005, 59.1%) were White, 20.6% (n = 350) were Asian and 220 (12.9%) were of another ethnicity. Ethnicity was unknown for 125 (7.4%) victims.

2.2 | Procedure

University ethics approval was secured and a data sharing agreement signed between West Midlands Police and the researchers. West Midlands Police provided raw data in the form of Microsoft Excel spreadsheets. Sensitive information (e.g. victim or suspect names or phone numbers) was anonymised or removed but, as an extra precaution, the data was stored on a password protected and encrypted memory stick. The dataset included the recorded offence type (e.g. attempted personal robbery, personal robbery and assault with intent to rob); the date and time of the offence; the offence location; victim and suspect demographics (including age, gender and ethnicity) and a free-word description of the offence known as MO (i.e. modus operandi) notes.

As offences are usually recorded per victim involved, rather than per incident (as is stipulated by Home Office Counting Rules; Home Office, 2022), the researcher had to undertake a cleaning of the data. This process was to ensure that an incident involving multiple victims would not be included in the sample multiple times, as this would inflate the rate of offence variables coded (e.g. if a rare behaviour displayed by an offender attacking multiple victims during the same incident would be coded multiple times, this behaviour would appear more prevalent in the sample than it actually occurred). To avoid such inflation of offence variables, all cases that were cross-referenced to other incidents or where the researcher could determine the cases were related to the same incident (i.e. sequential crime reference numbers, when date, time and location were identical and the MO notes showed near-identical accounts of what happened), were merged into one case record. The victim information of all these cases was retained. The final sample for analysis comprised 1624 personal robbery offences.

2.3 | Defining the night-time economy

Geocode data was not accessed for this study (it fell outside the purview of the data sharing agreement), and so association of a crime with a NTE context was measured in a qualitative rather than quantitative way, using the information available from crime records. To be able to compare NTE-related and NTE-unrelated robbery offences, a variable for 'night-time economy' thus needed to be established. This was done by first creating a variable for 'night-time' using the information on the time of the offence as recorded in the police files (i.e. night-time was coded as present if at least part of the offence took place in the time period between 18:00 and 06:00). A specific variable for 'night-time economy' (NTE) was then created for those crimes that occurred both during the night-time and were linked to a NTE-related location (e.g. pubs, night clubs and bars) as stated either by a 'pub' flag integrated within the data or where the MO notes stated the victim had been 'on a night out'.

2.4 | Coding of offence variables

A content analysis of the MO notes free text (written description of how the offence occurred) was undertaken to identify offence behaviours. Those included the involvement of a vehicle during the offence; carjacking; offence location (ATM, bus stop, car park, subway tunnels and canals and takeaways); the offender's approach style (surprise, con approach); involvement of alcohol; use of force for victim-control; verbal threats made by the offender; presence of a weapon (sharp, blunt, firearm); use of a weapon (sharp, blunt, firearm or fist—although this is not regarded as a 'weapon' per se, this variable was included to demonstrate physical means of attacking a victim); if the victim was injured during the offence (the information available did not allow for a grading of the severity of the injury); for offenders and victims whether they were part of a group (yes, no). The group size variables (e.g. robberies committed by groups and group of victims targeted) were derived from the suspect and victim descriptions present in the police records. As in some cases, no (or not all) offenders are identified (and therefore the number of suspect descriptions present does not match with the account in the MO notes), the MO notes were used to confirm the number of

offenders involved in each incident. Preexisting variables in the police records which were also used for analysis included victim and suspect demographics (age, gender and ethnicity).

To ensure the variables were coded consistently throughout the sample, a coding dictionary was created. As police data is usually not suited for complex coding methods (Canter & Heritage, 1990) and assigning behaviours to specific offenders in the context of group crimes is not always possible, a binary system was developed to code the behaviours displayed in each incident. A behaviour was coded as absent (0) or present (1) (if displayed by at least one offender during the incident). This approach is well-established and has previously been used by other researchers (e.g. Bennell & Canter, 2002; Bennell & Jones, 2005; Burrell et al., 2015; Woodhams et al., 2019; Wüllenweber & Burrell, 2020). After the variables were coded, 10% of the cases (n = 162) were independently coded by the second author to allow for the calculation of inter-rater reliability for the 20 variables that were coded using the coding dictionary. The results showed an almost perfect level of both agreement and kappa (k) (McHugh, 2012), with a percentage agreement of 99% and k = 0.96.

2.5 | Analytical strategy

To examine the relationship between the categorical variables, a total of 26 2 × 2 Chi Square tests were conducted. Separate Chi-Square tests were carried out with all categorical data to establish the differences between night-time-related and night-time-unrelated offences with regard to the offence characteristics. One of the assumptions of the Chi Square analysis is that expected frequencies are not below five. This assumption was violated in five instances, so Fisher's exact test was used (Field, 2005). Cramer's V, which measures the strength of the association between two categorical variables (Field, 2005) was used to calculate effect size. The results of Cramer's V were interpreted using Akoglu (2018) as presented in the table below:

V > 0.05	Weak effect
V > 0.10	Moderate effect
V > 0.15	Strong effect
V > 0.25	Very strong effect

3 | RESULTS

3.1 | Descriptives

The NTE crimes (n = 203) included 213 victims and 39 suspects for whom details were known (at least partially). The non-NTE crimes (n = 1421) included 1487 victims and 463 suspects. The majority of suspects were male in both NTE (92.3%) and non-NTE (90.1%) contexts. The average age of the suspects was 23 (M = 22.92, SD = 8.49) for NTE crimes and 22 (M = 21.44, SD = 7.29) for non-NTE crimes. The average age of victims in non-NTE crimes was 27 (M = 26.50, SD = 11.34) and in NTE crimes, the average victim age was 25 (M = 25.05, SD = 7.24). Although there were fewer female victims than males in general, their number drops from 27.3% in non-NTE crimes to 14.1% in NTE crimes.

3.2 | Analysis for crimes related to the night-time economy

Chi-Square analyses were run to compare crimes related to the NTE with those that were not (see Table 1). The analyses revealed a few differences in offence characteristics between NTE-related and non-NTE-related crimes. A higher involvement of alcohol in NTE-related crimes was significant (33.0% vs. 6.7%, $X^2(1) = 137.02$ and $p = .000$) as was a higher percentage of weapons used (37.9% vs. 28.8%, $X^2(1) = 7.09$ and $p = .008$), although a significant difference for the type of weapon was only found for 'fist' (34.0% vs. 25.6%, $X^2(1) = 6.37$ and $p = .012$). Injuries were also more strongly related to NTE-related crimes (21.2% vs. 13.4%, $X^2(1) = 8.82$ and $p = .003$). All of the above results were associated with effect sizes showing a weak effect, apart from the difference in alcohol, which represented a very strong effect.

Further analysis was aimed to identify offender and victim group dynamics with relation to robbery offences and showed that there was no significant difference in offender or victim group size (e.g. lone vs. group) between non-NTE and NTE robberies. However, offender behaviour displayed throughout the crime differed with regard to how victims were targeted, with a con approach being used more often in NTE-related crimes (38.9% vs. 25.6%, $X^2(1) = 15.84$ and $p = .000$) again presenting a weak effect.

In terms of hotspots, the results revealed that robbery offences related to the NTE frequently take place around cashpoints (8.9% vs. 4.5%, $X^2(1) = 7.05$ and $p = .008$), as opposed to non-NTE robberies, but less so around bus stops (1.5% vs. 5.0%, $X^2(1) = 5.06$, $p = .025$), with results again showing weak effects. The locations of car parks, subway tunnels or takeaways did not show any significant differences between NTE and non-NTE robberies.

4 | DISCUSSION

The aim of this study was to identify if there are any specific characteristics of robberies that are related to the NTE (i.e. occurring between 18:00 and 06:00 around late-night entertainment venues).

The current research shows that most robbery offences are committed by male suspects, mostly in the age range of 15–28, on male victims aged between 15 and 35. This is in line with the recent statistics about robbery offences in England and Wales (Office for National Statistics, 2020). Furthermore, the proportion of offences committed against males was higher in an NTE context. It is possible that this might be explained by men being heavier drinkers (Moore et al., 2007) and therefore, perhaps more likely to be in the NTE environment.

In line with the **first hypothesis**, the results revealed that NTE-related robberies are more likely to involve alcohol than non-NTE-related robberies. This is unsurprising, given the close association between the NTE and alcohol-related crimes in general. Based on the close link between alcohol-related crimes and violent crimes (Finney, 2004), it was argued that this association would be reflected in differences in violent behaviour between NTE-related and NTE-unrelated robberies.

Hypothesis 2 therefore proposed that variables associated with violence would be more abundant in NTE offences. This was tested using variables relating to the force exerted to control the victim, weapon use and injuries sustained by the victim. The findings are mixed. The research found no difference in the amount of force used to control the victim or weapons present during the offence. However, NTE-related robberies did show a higher level of weapon use (e.g. held against a person or to injure), indicating that the NTE context might escalate weapon use. Further examination of the data about the type of weapon used revealed that the only 'weapon' used more often in the NTE was 'fist', which along with a higher presence of injuries in NTE-related robberies, confirms the **second hypothesis** that these crimes are more likely to involve violence.

Summarising these initial findings, it seems that NTE robberies might be characterised by fights amongst intoxicated individuals where this ends up in a robbery rather than the robbery being the initial intention. This would suggest NTE robberies are associated with known crime generators (such as venues). The lack of a significant difference present in a weapon can be explained through the rare use of weapons in robbery generally and points to an

TABLE 1 Percentages and chi square results for group differences of NTE versus non-NTE.

Variable	NTE-related (*n* = 203)	Non-NTE-related (*n* = 1421)	X^2
Offender group	65.5%	59.4%	$X^2(1) = 2.78$, $p = .096$ $V = 0.041$
Victim group	13.3%	13.0%	$X^2(1) = 0.12$, $p = .911$ $V = 0.003$
Surprise	18.7%	24.9%	$X^2(1) = 3.72$, $p = .054$ $V = 0.048$
Con	38.9%	25.6%	**$X^2(1) = 15.84$, $p = .000$** **$V = 0.099$**
Alcohol	33.0%	6.7%	**$X^2(1) = 137.02$, $p = .000$** **$V = 0.290$**
Vehicle	7.9%	8.9%	$X^2(1) = 0.25$, $p = .620$ $V = 0.012$
Carjacking	1.0%	1.8%	$X^2(1) = 0.65$, $p = .420$ Fisher's = 0.57 $V = 0.020$
Force	51.2%	56.5%	$X^2(1) = 2.01$, $p = .157$ $V = 0.035$
Threats	16.7%	20.6%	$X^2(1) = 1.67$, $p = .198$ $V = 0.032$
Weapon present	14.8%	17.5%	$X^2(1) = 0.90$, $p = .344$ $V = 0.023$
WP sharp	10.8%	12.4%	$X^2(1) = 0.40$, $p = .528$ $V = 0.016$
WP blunt	2.5%	2.5%	$X^2(1) = 0.00$, $p = .952$ $V = 0.001$
WP firearm	0.5%	1.1%	$X^2(1) = 0.69$, $p = .407$ Fisher's = 0.71 $V = 0.021$
Weapon used	37.9%	28.8%	**$X^2(1) = 7.09$, $p = .008$** **$V = 0.066$**
WU sharp	2.0%	1.3%	$X^2(1) = 0.51$, $p = .475$ Fisher's = 0.52 $V = 0.018$
WU blunt	2.5%	1.8%	$X^2(1) = 0.38$, $p = .537$ Fisher's = 0.58 $V = 0.015$
WU firearm	0.5%	0.2%	$X^2(1) = 0.57$, $p = .449$ Fisher's = 0.41 $V = 0.019$

(Continues)

TABLE 1 (Continued)

Variable	NTE-related (*n* = 203)	Non-NTE-related (*n* = 1421)	X^2
WU fist	34.0%	25.6%	**$X^2(1) = 6.37$, $p = .012$** **$V = 0.063$**
Injuries	21.2%	13.4%	**$X^2(1) = 8.82$, $p = .003$** **$V = 0.074$**
Bus stop	1.5%	5.0%	**$X^2(1) = 5.06$, $p = .025$** **$V = 0.056$**
Car park	4.4%	3.9%	$X^2(1) = 0.11$, $p = .738$ $V = 0.008$
ATM	8.9%	4.5%	**$X^2(1) = 7.05$, $p = .008$** **$V = 0.066$**
Subway tunnels	9.4%	7.9%	$X^2(1) = 0.52$, $p = .470$ $V = 0.018$
Takeaways	3.9%	4.2%	$X^2(1) = 0.02$, $p = .887$ $V = 0.004$

Note: Statistically significant differences are highlighted in bold.

unavailability of other weapons (other than fist) in NTE robberies. This further indicates that there is no predetermination in the offender to use weapons (or potentially to commit the robbery in the first place), and rather, the use of weapons (punching) is a result of situational factors (because the offender has not taken a weapon to the scene) and/or arise from fights between suspects and victims (e.g. an exchange of punches). In fact, some researchers (Kaplan et al., 2001; Parker & Auerhahn, 1998) have previously argued against the direct effect of alcohol on heightened levels of violence, and instead have pointed to the social environment as a much stronger factor in predicting alcohol-related assaults. The argument is based on the notion that alcohol reduces the offender's inhibitory processes, making them more susceptible to provocation (Bushman, 2002; Lipsey et al., 2002) rather than directly influencing levels of aggression and violence. In the context of NTE-related crimes generally, and robbery more specifically, this could point to social contexts as mediating factors between increased levels of alcohol (and thus low inhibition) and subsequent crimes, whereby the social context contributing to the crime would be seen as the lack of capable guardianship. This suggests that NTE robberies are more opportunistic in nature, making such incidents difficult to predict and mitigate against.

The **third hypothesis**—that NTE offences would be more associated with groups—was rejected based on the current evidence. This was a surprising finding as, although group offending had previously been linked to night-time in robbery offences (Wüllenweber & Burrell, 2020), this does not seem to extend to the NTE, as neither of the groups of offenders or victims was found to be more associated with NTE robberies. The research of Wüllenweber and Burrell (2020) had, however, already pointed to the missing association between group offending and locations such as pubs, bars and nightclubs. However, these types of locations were found to be low occurring across the sample and so it may tend to appear differently when looking at the context (e.g. NTE) compared to a specific type of venue (e.g. pub). This missing link between both offender and victim groups and NTE robberies is still surprising, given that NTE itself is usually associated with groups of people on a night out. This indicates that for NTE crimes also, there might be a difference worth investigating in future studies.

In terms of the approach style used, the **fourth hypothesis** was confirmed through a higher use of conning strategies by NTE offenders. In contrast to the scenario outlined above (a fight getting out of hand), the higher prevalence of con approaches could suggest that there are some offenders operating in the NTE economy in a more targeted way. The crime triangle would predict that motivated offenders could be drawn to NTE environments where there

is an abundance of suitable targets and a lack of resources to police the area. As such, the NTE would act as a crime attractor especially for offenders with a preconceived motivation to target particular NTE locations. Bernasco and Block (2011) support this argument and point to the element of small cash transactions in the development of pubs and clubs into crime attractors for robbery. Differences in relation to offence locations identified in the current study also support this argument—for example, there were more offences at ATMs in the NTE which can include victims being conned by offenders to accompany them to an ATM, where they are ultimately being robbed. In fact, returning to the data revealed that 12 out of the 18 offences at ATMs used a con approach supporting this as a possible explanation.

Hypothesis five was rejected as NTE-related venues and locations (e.g. takeaways) were not more strongly associated with NTE-related robberies. This might be explained if there is sufficient guardianship at these locations and offences were occurring outside (e.g. between venues) where guardianship is less robust. Previous research has indicated that this is the case (e.g. Hadfield, 2006). Moreover, given that the previous research found clusters of robbery around transport hubs (e.g. Bernasco et al., 2016; Gaziarifoglu et al., 2012), it might be anticipated for the differences to be found between NTE and non-NTE robberies depending on which transport was available. The current study found fewer NTE-related offences around bus stops compared to non-NTE-related robberies; the most obvious explanation for this being variations in service hours, with fewer buses operating late at night and in the early hours of the morning and most people using taxis. As a result, it would be anticipated that robbery would shift to other transport services, such as taxis. Unfortunately, prevalence and nature of robbery at/near taxi ranks could not be examined in this study, due to a low number of incidents associated with this location in the sample and difficulties coding this location type reliably. Street robbers have been shown to consistently target transit hubs even when there are fewer targets (Bernasco et al., 2016); and therefore, future work focusing on the prevalence of robbery at taxi ranks or in taxis would be useful to determine if this is a specific NTE issue that needs to be addressed. A more geographical approach in investigating NTE-related robbery hotspots might also be able to identify convergence settings of motivated offenders and suitable targets.

Overall, the findings of the current study indicate a specific offence pattern associated with NTE robberies that makes it possible to distinguish them from non-NTE robberies. More importantly, two very distinct offence processes were identified within the cohort of NTE robberies: one subset relating to crime generators and the other one to crime attractors.

4.1 | Limitations

The limitations of using police-recorded crime data are well documented (e.g. Alison et al., 2001; Bennell & Canter, 2002; Gerell, 2018; Mazeika & Summerton, 2017), with authors noting that reported crime does not capture all offences that are committed resulting in gaps in the evidence. Thus, it is not possible to determine how representative the sample is. However, although there may be gaps, it is argued these are likely to be smaller with robbery offences than for other offences. For example, Flatley (2017) reports that approximately two-to three-fifths of victims report robbery to the police, providing some confidence that key trends should have been captured by the data. Further, the sample was retrieved from one of the three force areas that make up 60% of recorded robberies in the whole of England and Wales (Flatley, 2017), which makes this sample more representative of robbery offences in the UK and adds to the generalisability of the results.

Gaps within crime reports are another potential issue—for example, victims might not report all the details of the offence (due to embarrassment, fear/trauma and/or memory loss). It is important to remember, therefore, that the absence of behaviour in a crime report does not necessarily mean the behaviour did not occur (Porter & Alison, 2006), only that it has not been recorded. If this information is not included in a crime report, it is not possible to assess its potential relevance to understanding crime. Likewise, the way some information is recorded might be subject to the person recording it (e.g. whether a victim is intoxicated might be based on the view of the officer recording the crime).

Despite these shortcomings in working with police records, the data can be considered ecologically valid as it is the same used by police officers and crime analysts (Burrell et al., 2012).

A final potential shortcoming relates to the availability of certain types of data. For example, it was not possible to obtain the geographical location that allowed for mapping of the specific crime occurrence locations. The context of NTE crime was thus examined in a qualitative rather than quantitative way. Whilst this meant that there were limitations in terms of measuring how 'vicinity' to a NTE-related establishment affects the abundance of robbery crime, this approach allowed for those crimes to be captured which might be related to the NTE context, but due to falling out of a set 'NTE radius' would not have been identified as such with a more geographical approach (e.g. a victim on a night out being robbed on their way home but away from NTE establishments). There are also limitations to using a 18:00–06:00 timeframe as this might not represent the economy aspect of the NTE accurately across all days of the week.

4.2 | Implications and future directions for research

This research could be used to inform police decision-making. For example, identifying contexts and locations with high criminal potential—either as crime generators or crime attractors— as well as circumstances that foster robbery offences could support patrol strategies or policies to reduce robbery offences in the NTE. Enhancing surveillance or security in locations popular with robbers (such as in the vicinity of ATMs) and increasing safety at vulnerable locations by putting in place capable guardianship might lead to a reduction in robberies drawn in by crime attractors, whilst stricter controls on alcohol consumption might reduce chances of opportunistic fights, which can act as robbery crime generators. This might also lead to a reduction in other offences that are likely to emerge as by-products of robberies (e.g. alcohol-related assaults) (Kinney et al., 2008). If the premise that the increased use of 'fists' in crime-generated robberies stems from the unavailability of other weapons (e.g. drinking glasses) is accepted, this would further speak for the continuation of the current plastic glass policy to ensure that opportunistic weapons remain hard to find in the NTE. This research also identified that a higher proportion of NTE robberies involved the use of a weapon and that there were more injuries, which may support decision-making around how to equip officers and how to manage their personal safety responding to incidents.

A key issue inherent to night-time crime is its strong connection with alcohol, which puts the handling of alcohol-related incidents in the centre of most intervention tactics (Burrell & Erol, 2009). This is useful, given the high number of assaults that occur in and around pubs and bars (Budd et al., 2003). However, resolving the alcohol issue for many urban centres' experience is not easy (Hadfield et al., 2009). Interventions need to be directed at different parts of the system in place as the spectrum of alcohol-related problems is manifold. Previously, these interventions have been used to control the availability and sale conditions of alcohol and have targeted risky individuals by fining or exclusion from specified locations (Burrell & Erol, 2009; Hadfield et al., 2009). This may be effective in the immediate reduction of antisocial behaviours that can have the potential of acting as crime generators, but there is scope to expand methods for reducing NTE-related problems on a wider scale to include those emerging through crime attractors. As such, it might be of value to differentiate between intoxicated parties in future studies as this might highlight additional defining characteristics of the two styles of NTE-related robberies identified in this study (i.e. premeditated robberies and fights that get out of hand). Given the current interest in offences related to spiking (e.g. putting a substance in someone's drink without their knowledge or consent), this is another area for potential exploration within a robbery context, as spiking can be a precursor to a premeditated robbery (House of Commons, 2022).

Future studies in the field of NTE crimes could examine the effect of different city setups in relation to their influence on crime (e.g. identify routes into and out of hotspot areas) and compare trends in crimes between different cities. A distance-to-nearest-premise metric via the use of geographical data might help identify more specific premises that are acting as crime attractors or generators, whilst a more refined time of day analysis (or weekdays vs. weekends) could reveal additional characteristics of NTE robberies. This could be tied in with measures of more

detailed contextual factors. As such, future work could combine observational information around environmental factors (e.g. footfall, guardianship and landscape) with police recorded crime data to ascertain whether the contextual information helps interpret findings in more depth. Examination of the variables occurring low in the current study (e.g. transit hubs) would also be beneficial to identify additional potential hotspots and might increase understanding about premeditative offenders.

Given the clear distinction that can be made between NTE and non-NTE robberies, it would be interesting to see if similar differences exist between daytime robberies and those related to daytime economy and whether similar subsets can be identified that can be linked to both crime attractors and crime generators. Adding insight to this context by means of a four-way comparison would further allow a better understanding of whether the differences between NTE robberies and non-NTE robberies identified in the current study are due to the 'night-time' or the 'economy' element or an interaction between them and would provide additional actionable intelligence for prevention. An additional comparison which could be made is between robbery and theft from the person. These two offences are similar, separated only by the use or threat of force (Home Office, 2022). Thus, including both robbery and theft from the person in research comparing NTE and non-NTE offences might offer some useful insights, for example, when considering level of force/violence used (i.e. a theft from a person in the non-NTE might escalate to a robbery in the NTE context).

A last point to note is the potential impact of the move towards a more cashless society. This will likely have an effect on the nature of robbery offences and how it evolves going forward. Although some researchers have previously suggested it unlikely for criminogenic activities associated with street culture to continue to flourish in a cashless society (Wright & Decker, 1996), it is possible that there will be a displacement in the items targeted by robbers. It is likely, for example, that the recent increase in the tap and PIN limit on contactless debit cards in the UK will lead to an increase in the cards being stolen (Farrell & Tilley, 2021a, 2021b). Likewise, this may result in an increase in premeditative robberies with offenders using conning strategies around ATMs to acquire cash. Research has indicated already that robbers operate in cash economies and identified ATMs as potentially criminogenic places (Bernasco et al., 2016) and so we might expect offenders to target people using ATMs if people use cash less often. As Burrell (2022) notes, to minimise the impact of stolen cards, appropriate safeguards will need to be put in place, such as limiting the number of tap purchases in a day. A problem-solving approach, with an emphasis on analysis of the nature of the problem, will be needed to inform the development of tailored responses.

5 | CONCLUSION

The current study revealed that it is possible to distinguish between NTE and non-NTE-related robberies through comparison of diverse demographic and offence behaviour variables. Here, the main differences lie in the involvement of alcohol and violence (particularly the use of fists as weapons). Furthermore, the study revealed two different processes through which NTE robberies can emerge—either as a response to crime attractors (with the NTE environment providing a setting suitable for motivated offenders to con vulnerable targets) or in relation to crime generators (such as pub fights leading to opportunistic robberies). In conclusion, these findings point to the importance of understanding differences in robbery in relation to the spatio-temporal context. Further research is needed to better understand these contextual aspects of such crimes to further inform and advance criminological theory and policy.

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CONFLICT OF INTEREST STATEMENT

The authors declare that there are no conflicts of interest.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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