Original Article

Repeat burglary victimization in Malawi and the influence of housing type and area-level affluence

Aiden Sidebottom

UCL Jill Dando Institute of Security and Crime Science, University College London, 35 Tavistock Square, London, WC1H 9EZ, England, UK.

E-mail: a.sidebottom@ucl.ac.uk

Abstract There is little research on repeat victimization in developing countries. This article reports the first study of repeat domestic burglary victimization in Malawi. Secondary analysis of data from a large multipurpose survey finds burglary to be highly concentrated. The influence of housing type – measured here as the building materials used – and area-level affluence is explored. Homes constructed of permanent materials, indicative of greater wealth, experienced higher rates of repeat victimization than those made of mud and thatch. This pattern is most pronounced in less affluent areas, although the variation in risk is less than that reported in comparable studies. Implications for preventing repeat burglaries in resource-limited settings are discussed.

Security Journal (2012) **25**, 265–281. doi:10.1057/sj.2011.22; published online 26 September 2011

Keywords: crime prevention; domestic burglary; Malawi; repeat victimization; resource-limited settings

Introduction

Nowhere has the luxury of possessing infinite crime reduction resources. Demand typically outruns supply. A rational crime control strategy might therefore allocate resources to where crime concentrates most. This approach has practical and ethical merits. Practically, targeting resources according to crime concentration potentially yields the greatest preventive gains. Ethically, resource allocation thereby favours the most vulnerable.

Repeat victimization here means multiple criminal victimizations of a person, property, place or vehicle. Crime displays a non-random distribution over space and time. The variation in crime rates observed across numerous levels of measurement (regional, national and international) is largely explained by variations in the concentration of crime (Farrell and Pease, 1993). A small proportion of repeatedly victimized targets typically account for a disproportionately large number of criminal victimizations (Farrell, 1995; Pease, 1998), and are often over-represented in crime-prone areas (Trickett *et al*, 1992). Research has also shown that victimization is found to be a reliable predictor of future victimization to the same target (Pease, 1998; Farrell and Pease, 2001) and, given the demonstrated communicability of risk for certain crime types, to similar targets close by (Townesley *et al*, 2003; Johnson *et al*, 2007). It follows that reducing revictimization can yield large reductions in overall crime rates.

Repeat victimization and its prevention has thus emerged as a prominent field for criminological study (for a recent review see Grove and Farrell, in press).

An extensive body of research covering a wide range of countries and crime types has established repeat victimization as a robust phenomenon (see Pease, 1998; Grove and Farrell, in press). Several well-documented demonstration projects have seen the concept, at least in United Kingdom, firmly rooted in the crime reduction discourse (see Laycock, 2001; Laycock and Farrell, 2003). One notable feature, however, of the repeat victimization literature is the paucity of studies in developing countries. This absence likely reflects a lack of (accessible) crime data and, one suspects, the interests of those funding victimization research. Absence of evidence concerning repeat victimization patterns is not equivalent to evidence of the absence of repeat victimization; however this dearth means we cannot reliably infer whether patterns commonly found in western industrialized countries can confidently be generalized to dissimilar developing settings. Addressing this gap in hitherto neglected settings is of practical as well as academic interest. It is in developing resource-limited countries where arguably the need to determine effective and judicious ways of maximizing the impact of limited crime reduction resources is most acute.

Malawi is one such example of a developing resource-limited setting. Currently, no studies have explored repeat victimization in Malawi. This article reports secondary analysis of nationally representative data for 11 280 households to provide the first empirical treatment of repeat victimization in Malawi, focusing on domestic burglary. This article has two aims. The first is to determine whether the domestic burglary victimization patterns in Malawi conform to theoretical expectations, largely based on the findings of Anglo-American research. Specifically, two (null) hypotheses are examined: (a) domestic burglary is randomly distributed across the sampled households, and (b) burglary events are independent; the probability of being burgled twice or more is what would be expected on the basis of chance alone. The second, following Bowers *et al* (2005), is to explore the influence of housing type – measured here as the building materials used – and areal affluence on revictimization risk. There are, of course, other determinants of burglary revictimization risk but expanding the analysis to include further factors is outside the scope and limited objective of this article.

The article is structured as follows. It begins by briefly reviewing the literature on repeat victimization, focusing on domestic burglary. In the next section, the study site (Malawi), data set and analytical strategy are described. The subsequent section reports the findings concerning repeat burglary victimization and the effect of housing type and area-level affluence on revictimization risk. The final section contains a discussion of the study's limitations and remarks on the implications of the findings for burglary prevention.

Previous Research on Repeat Burglary Victimization

Despite repeats being common for many crime types, to date most of the research concerned with repeat victimization has concentrated on residential burglary (Farrell, 2005; Farrell and Pease, 2006). Consistent with the literature more generally, already burgled households display an elevated risk of subsequent victimization that tends to diminish over time (Polvi *et al*, 1991; Pease, 1998). Sagovsky and Johnson (2007) using data from Australia find that the probability of a household being burgled again after an initial victimization is six

times that of becoming a victim in the first place. In Saskatoon, Canada, the rate of further burglaries to the same household is nearly four times that of being burgled once (Polvi *et al*, 1991). Many burglaries are thus repeat offences concentrating on a small minority of households. The British Crime Survey estimates that around 40 per cent of domestic burglaries are repeat offences (Budd, 1999). Using police recorded crime data the proportion of repeat offences is reported to range from 13 per cent in Merseyside, England (Johnson *et al*, 1997) to 32 per cent in Beenleigh, Australia (Townsend *et al*, 2000).

Explanations for repeat victimization centre on two mechanisms (see Tseloni and Pease, 2003; Johnson, 2008). The first is the *boost* account (Pease, 1998). This suggests that an initial victimization temporarily increases the likelihood of ensuing (repeat) victimizations – crime events are dependent. This is understood in terms of the perceived risks, benefits and rewards associated with offenders returning to a previously victimized target (Cornish and Clarke, 1986; Johnson and Bowers, 2004); the knowledge obtained following an initial offence (entry and exit strategies, housing layout and so on) increases the likelihood of an offender returning. The second explanation is the *flag* account (Sparks, 1981; Johnson, 2008). This holds that repeat victimization patterns are explained by variations in time-stable attributes that *flag* certain targets as attractive. The flag hypothesis implies that offences against the same target may be committed by different, unrelated offenders, made aware of crime opportunities by enduring attributes that denote certain targets as attractive.

Repeat domestic burglary can be explained by both processes, as well as interactions between the two: a comparatively attractive household that is burgled (*flag*) may suffer further burglaries if the offender considers repetition worthwhile (*boost*) (Farrell *et al*, 2002). Polvi *et al* (1991, p. 414) summarize the processes as follows:

1. The same offenders return, perhaps upon recognition of neglected crime opportunities, or the anticipated reinstatement of goods.
2. The first offenders tell others of the house and what it still offers. The others then burgle it.
3. Features of the house are such as to mark it out as a compellingly attractive target to those tempted to burgle it, leading to repeat victimization linked only by the seductiveness of the target.

At root, the above accounts speak to offender perceptions concerning target site selection. Research maintains that offenders display preferences for certain targets, compatible with the rational choice perspective (Cornish and Clarke, 1986) and, more recently, the optimal foraging approach (Johnson and Bowers, 2004; Bernasco, 2009). It is assumed that burglars purposefully select households (and areas) that are perceived to afford greater rewards – monetary and psychic – relative to the perceived risks of failure and apprehension. Familiarity is key. Interviews with convicted burglars suggest that offenders favour households of that they are familiar compared with alternative opportunities for which they possess little or no knowledge – repetitive offending against the same household is the paragon of this preference (Shaw and Pease, 2000).

Several determinants might influence why burglars prefer one household (and neighbourhood) over another (Bernasco and Luykx, 2003; Bernasco and Nieuwbeerta, 2005). One popular area of enquiry concerns the influence of housing type on (re)victimization risk. It is argued that the characteristics of different housing types confer different levels of

attractiveness to offenders. Such characteristics may relate to certain types of housing being suggestive of greater wealth or certain types of household affording easier opportunities for offending. Analysis of British Crime Survey (Tseloni, 2006) and police recorded crime data (Bowers *et al*, 2005) find significant variation in burglary levels across different housing types. Most germane here given its focus on repeat victimization, Bowers *et al* (2005), using 5 years of police recorded crime data for Merseyside, England, find that terraced housing and flats suffer significantly more repeat burglaries than is explained by chance alone. For detached and semi-detached properties the reverse was true.

Beyond housing type, previous research indicates that households located in the most disadvantaged areas tend to experience higher rates of repeat burglary victimization (Trickett *et al*, 1992; Johnson *et al*, 1997; Ratcliffe and McCullagh, 1999). In this vein, Bowers *et al* (2005) also explore whether the influence of housing type on revictimization risk is mediated by the area in which properties are located. Their hypothesis is grounded in claims that offenders follow a two-stage hierarchical procedure when selecting suitable crime targets (Brantingham and Brantingham, 1984; Rengert and Wasilchick, 1985). This suggests that offenders initially select a suitable *area* in which to forage. Crime pattern theory informs us that this tends to be in areas that offenders are familiar with and where their routine activities tend to concentrate in and around (Brantingham and Brantingham, 2008). On selection of a suitable area, the search for a suitable *target* begins. Bowers *et al* (2005) find that detached houses located in more deprived areas experience higher rates of repeat victimization than similar types of properties located in more affluent areas. For example, a detached property in the most deprived area quintile was found to be at over 20 times the risk of suffering repeat burglaries than detached houses in the most affluent area quintile. The findings are consistent with rational choice theory: detached properties, suggestive of a greater burglary yield, tend to be less prevalent in poorer areas and thereby are comparatively more attractive targets for burglary than ostensibly less-affluent alternatives located nearby.

Crime is clearly context-sensitive: different social, temporal and physical configurations give rise to different types, levels and patterns of crime. The generalizability of the patterns described are yet to be sufficiently explored in developing contexts, particularly in sub-Saharan Africa. To be clear, this is not unique to the study of repeat victimization (or environmental criminology more generally); the bulk of criminological research has been conducted in North America and Western Europe, and that which has occurred in developing settings is largely qualitative in method and sociological in scope. Empirical research that speaks to crime prevention has received less attention (Bowles *et al*, 2005). Addressing this gap offers important theoretical and practical implications for advancing the study and prevention of repeat victimization.

The Current Study

This article reports the first study of repeat domestic burglary victimization in Malawi. The primary objective is to establish whether the repeat victimization patterns routinely observed in western industrialized countries are also observed in the developing setting of Malawi. The secondary objective, following Bowers *et al* (2005), is to explore whether burglary revictimization risk varies by housing type and area-level affluence.

Background to study location: Malawi

Malawi is a small, landlocked country in southeast Africa. It is a former British colony that gained independence in 1964, followed by 30 years of autocratic rule during the tenure of 'life president' Dr Kamuzu Hastings Banda. June 1994 marked the advent of democratic multipartyism. It remains among the world's most densely inhabited countries with an estimated population of 15 million, of which the majority live in rural areas. With a gross domestic product of US\$ 902 per capita (US=\$46 653; UK=\$34 342), Malawi is consistently found to be one of the poorest and most aid dependent countries in the world. Recent estimates report over half of the population live on less than \$0.50 a day (Republic of Malawi & The World Bank, 2006). Unlike many other African countries Malawi has few natural resources. Its economy is largely centred on subsistence farming with tobacco the principal export. Physical and social infrastructure such as roads, schools and hospitals are considered generally inadequate, particularly in rural regions. Health indicators such as infant mortality and life expectancy remain poor by international standards, linked with the high prevalence of HIV/AIDS (see Feldacker *et al*, 2011).

Crime in Malawi

As mentioned earlier, many commentators highlight the paucity of criminological research in sub-Saharan Africa (Bowles *et al*, 2005; Leggett *et al*, 2005). This is largely explained by the lack of accurate and reliable crime data. Leggett *et al* (2005) estimate that official police recorded crime data are available for only half of all African countries. Marenin (1997) adds that that which is available is often unreliable due to high levels of under-reporting and patchy recording processes. Problems are amplified by the lack of victimization surveys in developing settings, which allow for estimates on the degree of inaccuracy in official crime data to be determined (Marenin, 1997). Just 13 of the 54 African states participated in the last sweep of the International Crime Victim Survey (ICVS).¹ Naudé *et al* (2006) attribute this lack of representation to funding constraints, limited analytical and research skills, lack of a research 'culture' and sensitivities regarding the perceived political fallout that the publication of crime statistics might initiate.

No official crime data are publicly available for Malawi. Similarly, the *United Nations Office on Drugs and Crime* that routinely collates crime statistics from over 120 countries, does not hold data for Malawi. Nor has Malawi participated in the ICVS. To the author's knowledge, the only empirical investigation of crime in Malawi is limited to the analysis of Malawi's first, and only, National Crime Victimization Survey (MNCVS) carried out in 2003 and reported in Pelser *et al* (2005). The MNCVS sought to provide information on the extent and distribution of crime in Malawi; assess rates of reporting crime to the police; and explore Malawian's perceptions of the police and criminal justice services. The sample comprised 6861 randomly selected households who participated in face-to-face interviews (1 May 2002–31 May 2003). Pelser *et al* (2005) report various noteworthy findings. They highlight the high incidence of crop and livestock theft, particularly in rural regions. Moreover, they find that reporting rates to the police are consistently low, primarily attributed to the offence not being considered important enough to warrant police involvement.

Repeat burglary victimization is not examined in the MNCVS. This is because domestic burglary victims are not asked *how* many times they were burgled in the previous year. This is despite the finding that burglary victims, when questioned on what is most important to them in the wake of a burglary, report that avoiding further victimization is a major concern. As is discussed below, in light of this limitation, this article takes advantage of data collected as part of a more recent multipurpose household survey.

Data

The current study uses data from the 2004 to 2005 Malawi Integrated Household Survey II (IHS II), coordinated by the National Statistical Office of Malawi (NSO) with technical assistance from the World Bank (National Statistical Office of Malawi, 2005a,b).² The IHS II collects information on various demographic, socioeconomic and health issues. Most germane here is the module concerning safety and security that asks questions relating to respondents experience of certain crime types, whether they reported crime to the police (and if not, why not?), feelings of safety and insecurity in the neighbourhood and preventive measures taken to reduce risk of victimization in the past year. Many are comparable to questions routinely asked in well-established crime victim surveys such as the US National Crime Victimization Surveys and the British Crime Survey. In the absence of official recorded crime data, the IHS II is considered the most recent crime-related data available for Malawi.

The IHS II employs a two-stage stratified sampling procedure covering the three regions of Malawi: North, Central and South. The geographic units of Malawi are organized hierarchically from a Region (the largest) down to the District level and then Enumeration Area (EA). The first stage of the sampling procedure used a sampling frame of all 9128 EAs in Malawi produced using data from the 1998 Population Census. In rural areas, an EA comprises between one and three (spatially proximate) villages; in urban areas it refers to a geographic area of around 1250 people. Each of the 26 administrative districts of Malawi³ is treated as separate stratum from which EAs (564 in total) were randomly selected accounting for population size.⁴ The second stage involved 20 households being randomly selected from each EA. All individuals living in selected households were then surveyed by a member of the NSO team.

The survey took place over 12 months between April 2004 and March 2005. The sample comprised a nationally representative cross section of 52 707 individuals occupying 11 280 households in 564 Malawian communities (EAs). Household questionnaires were completed by every individual aged 10 and over alongside a member of the NSO team. The response rate was 96 per cent.

Dependent variable

The IHS II asks: *in the past year, did anyone enter your dwelling to steal, to try to steal something, or to commit other crimes?* This is considered equivalent to what is generally referred to (in the United States and United Kingdom) as domestic burglary.⁵ The unit of analysis is a single unique residential property ($n=11\,280$). Consistent with previous

research, a repeat offence was defined as having occurred at the same residential property within the 12-month observation period. One important limitation in the data, which is discussed later but is noted at this point, is that experience of domestic burglary is truncated at four or more victimizations. Although standard practice in many victimization surveys, Farrell and Pease (2007) demonstrate that this underestimates the total incidence of crime, particularly undercounting chronically victimized individuals. We would expect the same to be true of the findings reported here: revictimization rates are likely to be underestimates.

Results

The distribution of domestic burglary (re)victimization in Malawi

Table 1 shows that 60.34 per cent of reported burglaries in Malawi over the study period were repeat incidents. In other words, approaching two-thirds of reported burglaries were in households that had previously been burgled on at least one occasion in the same year. This is high by international standards (see Farrell *et al.*, 2005) and may be explained, in part, by the broad definition of domestic burglary used herein compared with other victimization surveys (for example, the ICVS).

To reiterate, research consistently demonstrates that crime disproportionately concentrates on a minority of repeatedly victimized targets. This is confirmed in the Malawian sample. Table 2 shows that 13 per cent of households report suffering a burglary in the past year. Those households experiencing more than one burglary (that is, repeat victims) accounted for 5.03 per cent of the total sample of households and suffered 1392 burglaries. Put differently, 60.34 per cent of the total number of reported burglaries took place in just 5.03 per cent of the sampled households. Nearly two-thirds of the revictimized households suffered two burglaries, whereas less than 1 per cent of households were victimized four times or more accounting for over 10 per cent of all reported burglaries. The distribution conforms to the general concentration patterns observed in previous studies: a small minority of households suffers a considerable proportion of burglaries committed.

The figures in Table 2 can be used to compute the likelihood of suffering a residential burglary in Malawi. The observed probability of a household being burgled one time only is 0.13.⁶ The probability of a burglary occurring in a household that has already suffered a burglary is 0.383.⁷ In line with previous research (Polvi *et al.*, 1991; Sagovsky and Johnson, 2007), this suggests that on being burgled once, Malawian households are nearly three times as likely to be burgled again over the one-year study period.

It is important to determine if the distribution in Table 2 can be explained by chance. If burglary is randomly distributed then we would still expect certain properties to be victimized more than once. Consequently, the observed distribution is assessed compared with what would be expected using a Poisson distribution. The Poisson distribution assumes that

Table 1: Domestic burglary victimization in Malawi, April 2004–March 2005 (inclusive)

<i>No. of sampled households</i>	<i>No. of burglary victims</i>	<i>No. of burglary incidents</i>	<i>No. of repeat incidents</i>
11 280	1482	2307	1392

Table 2: Domestic burglary (re)victimization in Malawi, April 2004–March 2005 (inclusive)

<i>No. of times burgled</i>	<i>No. of households</i>	<i>Percentage of sampled households</i>	<i>Percentage of sampled households re-victimized</i>	<i>No. of burglaries</i>	<i>Percentage of burglaries</i>
0	9798	86.86	NA	0	0
1	915	8.11	NA	915	39.7
2	370	3.28	65.26	740	32.1
3	136	1.21	23.99	408	17.7
4 or more	61	0.54	10.76	244	10.6
Total	11 280	100.00	100.00	2307	100.00

Table 3: Observed and expected frequency (assuming a Poisson distribution) of the number of Malawian households burgled once to four times or more, April 2004 – March 2005 (inclusive), ($N=11\,280$)

<i>No. of burglaries</i>	<i>Observed frequency</i>	<i>Expected frequency</i>
0	9798	9194
1	915	1880
2	370	192
3	136	13
4+	61	<1

the probability of a household being victimized more than once is independent of the number of previous victimizations. It provides a measure of the likelihood of a household being repeatedly victimized if the distribution of crime is random, given the number of burglaries committed and the number of potential targets (households) available (see Sparks *et al*, 1977; Bowers *et al*, 2005; Sagovsky and Johnson, 2007).⁸ Table 3 shows the observed frequency of victimized households (up to four times or more) and the expected frequency derived from a Poisson distribution.

A χ^2 -test confirmed that the difference between the observed and expected frequencies of burglary assuming a Poisson distribution was statistically significant ($\chi^2=7285$, $df=1$, $P<0.0001$, $n=11\,280$). This provides support to reject the null hypothesis; significantly more repeat burglaries occurred than would be expected on the basis of random victimization. Particularly noteworthy is that the number of Malawian households victimized four times or more is much higher than can be explained by mere chance.

Burglary revictimization in Malawi by dwelling type

The above findings demonstrate the uneven distribution of burglary across sampled households in Malawi. A limitation with this analysis is that it treats households as homogenous. In reality, of course, households vary considerably and in ways that will likely affect their attractiveness as potential burglary targets. As alluded to previously, for burglary an obvious characteristic that might influence the attractiveness of a target is the target itself, that is, the household. Ethnographic research finds many burglars are primarily driven by material profit (Repetto, 1974; Bennett and Wright, 1984; Rengert and Wasilchick, 1985).

It is therefore contended that burglars, all things being equal, will tend to prefer ostensibly affluent targets to poorer ones, suggestive of a greater burglary yield (Bowers *et al*, 2005).

Although affluence can be characterized in numerous ways, arguably the most obvious household-relevant characteristic pertaining to affluence is housing type. Research in this tradition, predominately conducted in the United Kingdom, tends to define housing type in terms of whether a property is detached, semi-detached, terraced or a bungalow or flat. Held constant is the material from which dwellings are constructed; all houses are permanent buildings comprising brick and mortar. In Malawi as in sub-Saharan Africa more generally, this assumption is untenable. Estimates from the 1998 Malawi census, the data from which the IHS II sample is derived, suggests that nearly two-thirds of the population live in properties comprising mud walls and a thatched roof, many of which have no access to indoor piped water and electricity (National Statistical Office of Malawi, 2000). In light of this housing profile, the IHS II categorizes households in three ways dependent on the materials from which the property is constructed:

- Traditional households are those made from materials such as mud brick, thatch and dung.
- Semi-permanent households are generally built using modern and partially lasting materials.
- Permanent households refer to dwellings built using modern or durable facilities.

Previous research concerned with variations in repeat victimization by property type has examined rates of repeats *within* households constructed of permanent materials, reflecting the areas in which such studies were conducted. Consequently, it is informative to consider whether the risk of suffering repeat burglaries in Malawi varies by household construction material, taken here to be an overt proxy for potential burglary yield.

Table 4 shows that traditional Malawian dwellings suffered the largest incidence of burglary. However, we also see that traditional dwellings constitute a larger proportion of all households surveyed. To standardize risk by dwelling type, a rate is computed using the number of sampled properties for each dwelling type as denominator. It can be seen that once standardized by available opportunities, dwellings made of permanent materials display a higher burglary rate.

Table 5 shows the risk of repeat burglary victimization for the described housing types. Several patterns are evident. First, there appears to be a general trend across all housing types of a non-linear relationship in terms of the number of revictimizations and the frequency of incidents; for each housing type the greatest risk is that of being victimized once, followed by the risk of being victimized twice and so on. The exception is for permanent dwellings.

Table 4: Relative risk of domestic burglary victimization by housing type, April 2004 – March 2005 (inclusive)

Housing type	HHs burgled	Total no. of HHs of this type in the sample	Prevalence rate	Total no. of incidents	Incidence rate per 100 HH
Permanent	304	1854	16.40	497	26.81
Semi-permanent	289	2157	13.40	440	20.40
Traditional	889	7264	12.24	1370	18.86

Table 5: Risk of repeat domestic burglary victimization by housing type, April 2004 – March 2005 (inclusive)

	<i>No. of repeats (percentage of all incidents per housing type)</i>			
	<i>0</i>	<i>1</i>	<i>2</i>	<i>3 +</i>
Permanent	172 (34.61)	176 (35.41)	81 (16.30)	68 (13.68)
Semi-permanent	178 (40.45)	158 (35.91)	72 (16.36)	32 (7.27)
Traditional	565 (41.24)	406 (29.64)	255 (18.61)	144 (10.51)

Despite this pattern, a sizable proportion of sampled properties independent of construction material experience multiple victimizations. Second, the risk of revictimization is found to be greatest for households made of permanent materials compared with other housing types, with nearly two-thirds of permanent dwellings revictimized in the same year. However, it must be noted that the difference between housing types is relatively small. Further to this, we find that compared to the other property types, the risk of a single burglary is greatest in properties constructed of traditional materials. One may speculate that increased revictimization rates in properties made of permanent materials may be explained by the boost account: properties comprised of permanent materials indicate greater wealth and, critically, may be suggestive of an ability to replenish stolen items (perhaps due to an increased likelihood of being insured). Households made of permanent materials might therefore possess a sufficient level of perceived attractiveness to warrant revictimization. Assuming repeats are the work of the same offender, traditional houses may be viewed as less able to reinstate stolen items and therefore the attraction of reoffending diminishes. Regrettably, because information is unavailable on the temporal components of residential burglary as well as the heterogeneity of risk across sampled households, sufficiently examining the boost and flag explanations is not possible with these data.

The foregoing analysis uses the material with which a dwelling is constructed as a proxy for target attractiveness: households made of permanent materials are considered to indicate greater affluence than properties of non-permanent materials and hence, all things being equal, suggestive of a greater burglary yield. To assess whether this assumption is valid, the relationship between household construction material and two further household-level measures of affluence is explored. The first is simply the mean estimated value of the property as reported by the head of household. The second concerns the value of a series of items that a household is reported to contain. The latter is measured in the IHS II by asking the head of household which of a series of durable goods were present in the household at the time of survey,⁹ and if so how many. Respondents are then asked, ‘If you sold one of [ITEM] today, how much would you receive?’ For households with more than one article per item type the average is taken. For the purposes of this article the value for all items within a property was computed and multiplied by the number of reported items per household. Though owning an item does not mean that an offender is cognizant of its presence, for this study the aim was merely to gauge the accuracy of the assumption that on average, the material with which a dwelling is constructed confers a rough approximation of the value of (potentially *thievable*) items inside.

Table 6 provides tentative evidence that the material from which a property is built is associated with varying levels of affluence. Traditional houses, on average, are significantly less valuable ($t(865.0)=3.068$, $P<0.05$) and the items within the household worth significantly

Table 6: Mean (and median) estimated US\$ value of households and value of items within households*

<i>Housing material</i>	<i>Mean estimated US\$ household value (median)</i>	<i>Mean estimated US\$ value of items in household (median)</i>
Permanent	\$22 688.41 (\$2142.86)	\$2688.68 (\$357.14)
Semi-permanent	\$1706.72 (\$535.71)	\$345.16 (\$136.17)
Traditional	\$323.95 (\$175.00)	\$149.65 (\$62.50)

*at the time of survey, US\$1=28 Malawian Kwacha.

less than dwellings made of permanent materials ($t(1807.7)=9.728$, $P<0.001$). It must be cautioned, however, that the variation *within* housing types, as can be seen by comparing the mean and median, is much greater for properties made of permanent materials.

Dwelling type and area-level affluence: An interaction?

The preceding analyses suggest that the risk of burglary in Malawi varies by housing type. A limitation with this analysis is that it does not consider the role of area-level influences on burglary risk: the findings may simply reflect systematic differences in the areas in which different property types tend to be situated. This is important because for the sample used here, there are over six times as many households made of traditional materials than those of permanent materials in EAs classified as rural. Moreover, the research described previously by Bowers *et al* (2005) suggests that experience of burglary is influenced by an interaction between area- and household-level factors. The second research question seeks to replicate the analysis of Bowers *et al* (2005) using the Malawi dataset.

Areal measures of affluence were computed as follows. First, the total reported household expenditure for each property per EA ($n=20$) was aggregated to produce a total household expenditure variable for the 564 EAs sampled. EAs were then grouped into quintiles. The most affluent 20 per cent of EAs – those with the highest collective household expenditure – were defined as quintile 1, the next most affluent 20 per cent were defined as quintile 2 and so forth. The least affluent 20 per cent comprised quintile 5. Certain caveats with this measure of area-level affluence warrant mention. For example, certain EAs may have a small number of very affluent households and a majority of non-affluent households, but average somewhere in the middle. Moreover, high levels of expenditure may not accurately capture affluence but instead reflect, say, a recent household shock such as disease or bereavement. Using self-reported expenditure as a measure of affluence may also be prone to bias reporting, although expenditure data is generally considered more accurate than alternative measures of affluence such as reported income; and furthermore reported household expenditure is positively associated with the target attractiveness variable described previously ($r=0.613$, $P<0.0001$).

Table 7 displays the number of households suffering repeat burglaries by dwelling type and affluence quintile. Prevalence rates are in parentheses. It indicates that although permanent households in general experience higher rates of revictimization, that risk is

Table 7: Number of repeat burglary households by affluence quintile

	<i>Housing type (prevalence rate per 100 homes)</i>		
	<i>Permanent</i>	<i>Semi-permanent</i>	<i>Traditional</i>
<i>Most affluent</i>			
Quintile 1	57 (7.55)	29 (5.56)	47 (4.88)
Quintile 2	19 (4.77)	20 (4.83)	77 (5.32)
Quintile 3	28 (8.67)	19 (4.76)	90 (5.86)
Quintile 4	11 (5.24)	20 (5.17)	62 (3.73)
<i>Least affluent</i>			
Quintile 5	17 (10.12)	23 (5.29)	48 (2.90)

influenced by area-level affluence. For example, properties made of permanent materials in the least affluent quintile (quintile 5) have the highest prevalence rate for repeat burglary. Area-level affluence also exerts an influence on revictimization for traditionally constructed households: the prevalence rate for repeat burglary is lowest in the poorer quintiles and highest in the above average quintiles albeit tailing off in the top fifth of the sample, where traditional dwellings are rarer. Although these patterns lend support to the findings of Bowers *et al* (2005) the variation between quintiles is less apparent than in their study.

Discussion

This article reports the first study of repeat domestic burglary victimization in Malawi, using data from a large multipurpose household survey. The primary research question sought to establish whether repeat burglary victimization existed in Malawi. It was found that although the majority of sampled households reported no burglaries in the past 12 months, approaching two-thirds of burglaries were committed against households who had already experienced burglary during this period. Burglary was found to disproportionately concentrate among a small minority of chronically victimized households, significantly more than would be expected on the basis of chance. Moreover, having been burgled once, the likelihood of a dwelling being victimized again was found to be nearly three times that of suffering an initial burglary. The findings suggest that the basic logic of repeat victimization – that a small proportion of targets experience disproportionately high numbers of victimization, and that the likelihood of two or more victimizations is higher than would be expected if crime events were independent – appears generalizable to Malawi.

The second research question concerned the influence of housing type and area-level affluence on revictimization risk. Households constructed of permanent materials, interpreted here as an overt indicator of affluence, were found to suffer a greater percentage of repeat offences than dwellings made of traditional and semi-permanent materials. Repeat

victimization rates for this housing type were highest in less affluent areas where properties of this type tend to be less frequent. Households constructed of traditional materials displayed the lowest risk of repeat victimization in the least affluent quintile compared to dwellings of the same materials in more affluent areas. Although these findings support the conclusions of Bowers *et al* (2005), the variation across quintiles observed in this study is far less pronounced. A number of factors might account for this contrast. One obvious reason is the measurement of area-level affluence. In this article EAs were assigned to affluence quintiles based on an aggregate of household-level expenditure. In their study, quintiles were produced by using the much richer *Index of Multiple Deprivation 2000*. It is recognized that the measure employed here is an imperfect proxy of areal affluence. However, detailed data equivalent to the *Index of Multiple Deprivation* are unavailable for Malawi.

Limitations

This study has several limitations. First is the time period in which repeats are calculated. The one-year observation period of the IHS II, like many victimization surveys, likely underestimates the extent of repeat victimization by failing to capture events that fall outside the reference period (Farrell *et al*, 2002). Second, the IHS II places limits on the number of burglaries that a respondent can report (that is, four or more). Although this is common in many victimization surveys, again it serves to undercount the volume of repeats (see Farrell and Pease, 2007). A third limitation is the time insensitivity of the data. As already cited, an abiding feature of repeat victimization is that victimization tends to recur quickly with risk decaying over time. Regrettably, the time course of repeat victimization in Malawi cannot be determined using the IHS II data because respondents are only asked to report their experience of burglary over the past 12 months – not *when* those burglaries occurred. This precludes any analysis concerning the temporal components of repeat victimization. Fourth, the data analysed here provides no indication of what was stolen and consequently each burglary event is treated as homogenous in terms of crime yield. We would expect substantial variation in the amount and value of items stolen across burglary events. Given the dependent variable used in this study could not distinguish between actual and attempted burglaries, it is possible that the high rates of (repeat) burglary reported here may, in part, be due to many incidents classified as burglary comprising events in which little, possibly nothing was taken. Finally, this study used cross-sectional survey data. It therefore shares the familiar limitations associated with survey-based research, namely the possibility of response error due to the fallibility of human memory (particularly telescoping), failure to include pertinent information in survey responses, and variation in respondent's willingness to respond honestly about their experiences as victims.

Implications of the findings for burglary prevention in resource-limited settings

The article began by highlighting how insights from the study of repeat victimization have made important contributions to crime control policy and practice. The rationale follows that given crime concentrates on a small number of targets then reducing revictimizations can produce substantial reductions in crime overall. This study provides initial evidence to

suggest that the patterns, and thus rationale for preventing repeat victimization, are generalizable to domestic burglary in Malawi. What then for translating these findings so as to inform burglary prevention in Malawi? Put differently, to what extent can schemes of proven effectiveness in western industrialized settings be transplanted, and tailored, to the Malawian context?

Farrell and Pease (2006) in their review of efforts to reduce repeat domestic burglary identify four hallmarks of successful projects: (a) strong preventive mechanisms attuned to the local problem and context; (b) the use of a package of interventions as opposed to stand-alone measures, particularly opportunity-reduction (situational) techniques; (c) effective implementation and (d) concentrating preventive efforts on high-crime areas. There is no reason to believe that the same ingredients will not be important determinants for reducing repeat burglary in Malawi. However in light of the noted resource-constraints, the practical challenges associated with operating in such settings are likely to be considerable. The lack of data for analytic and evaluative purposes and issues concerning the mobilization of actors to implement and maintain interventions are expected to be challenging. Moreover, despite strong evidence demonstrating the effectiveness of situational measures in reducing a wide range of crime types (Clarke, 2008), commensurate with criminological research more widely, there is a distinct lack of research considering the practicability of situational crime prevention both in terms of the economic, social and political conditions in which it would need to be developed and operated, and in terms of the scope for making changes in the environment of developing countries that would significantly lessen crime opportunities. Research exploring the potential for applying situational crime prevention in Malawi in particular and in resource-limited settings more generally is considered important.

Beyond a defensible resource-allocation strategy, the study of repeat victimization emphasizes the importance of the victim in the provision of criminal justice services. The consequences of chronic victimization are well documented: heightened fear of crime, retreat from public life, higher levels of emotional distress and increased desire to vacate an area (see Winkel, 1998; Mawby, 2001a, b; Shaw, 2001). In developing settings the impact may be greater still. Experience of crime can seriously affect the quality (and quantity) of life, particularly through the loss of critical items. This is amplified by the general lack of insurance in developing countries (Van Dijk, 2001). Presently, victim support services across sub-Saharan Africa are limited (Leggett *et al*, 2005). In light of the high rates (and concentration) of burglary reported here, the development of victim-assistance programs through partnerships between government bodies, international donors and relevant NGOs with a view to address repeat victimization is a worthy endeavour.

Finally, the article began by highlighting the lack hitherto of research on repeat victimization in developing countries. It is worth reiterating that the present study reports secondary analysis of data collected as part of a multipurpose survey, in which crime and safety is but one consideration. Although a primary focus on crime may have afforded greater detail and ameliorated some of the described shortcomings in the data, taking advantage of similar data sources in other under-researched areas may help address the noted paucity of repeat victimization research in developing countries. To this point, it is hoped that the analyses reported here might stimulate further research in similarly neglected contexts. The author contends that this might be a fruitful research area to advance as well as strengthen the study of repeat victimization.

Acknowledgements

Data were provided by the National Statistical Office of Malawi. Thanks go to Kate Bowers, Ken Pease, Nick Tilley and two anonymous reviewers for their helpful comments on earlier drafts of this article.

Notes

- 1 Botswana, Egypt, Lesotho, Mozambique, Namibia, Nigeria, South Africa, Swaziland, Tanzania, Tunisia, Uganda, Zambia and Zimbabwe.
- 2 The first Integrated Household Survey was conducted in 1997–1998. Five new modules were added to IHS II, including the Security and Safety module. A comparison of crime-relevant data over the two sweeps is therefore not possible. Data collection for the third Integrated Household Survey is due to take place in 2012.
- 3 There are officially 27 administrative districts in Malawi. However Likoma District – a small island in Lake Malawi comprising around 10 500 individuals – was excluded from IHS II because of the difficulties associated with travelling and surveying there.
- 4 The number of EAs per stratum were determined using the following rules: 0 to 75 000 households = 12 EAs; 75 000 to 125 000 households = 24 EAs; 125 000 to 175 000 households = 36 EAs; 175 000 to 225 000 households = 48 EAs.
- 5 It is worth highlighting that the definition of domestic burglary used herein is broader than some other victimization surveys (for example, the ICVS). Consequently, victimization rates reported in these surveys may be lower reflecting the narrower definition.
- 6 $(915 + 370 + 136 + 61/11280)$.
- 7 $(370 + 136 + 61)/(915 + 370 + 136 + 61)$.
- 8 As an alternative to the Poisson distribution used here, it is worth drawing the reader's attention to a recent paper by Tseloni and Pease (2010) in which they use a *negative binomial* distribution to model crime data.
- 9 The 19 durable goods are a mortar/pestle, bed, table, chair, fan, air conditioner, radio (wireless), tape or CD player, television and VCR, sewing machine, kerosene/paraffin stove, electric or gas stove, refrigerator, washing machine, bicycle, motorcycle, car, mini-bus and lorry.

References

- Bennett, T. and Wright, R. (1984) *Burglars on Burglary*. Aldershot, UK: Gower.
- Bernasco, W. (2009) Foraging strategies of homo criminalis: Lessons from behavioral ecology. *Crime Patterns and Analysis* 2(1): 5–16.
- Bernasco, W. and Luykx, F. (2003) Effects of attractiveness, opportunity, and accessibility to burglars on residential burglary rates of urban neighbourhoods. *Criminology* 41(3): 981–1001.
- Bernasco, W. and Nieuwebeerta, P. (2005) How do residential burglars select target areas? A new approach to the analysis of criminal location choice. *British Journal of Criminology* 45(3): 296–315.
- Bowers, K., Johnson, S.D. and Pease, K. (2005) Victimisation and revictimisation risk, housing type and area: A study of interactions. *Crime Prevention and Community Safety* 7(1): 7–17.
- Bowles, R., Akpokodje, J. and Tigere, E. (2005) Evidence-based approaches to crime prevention in developing countries. *European Journal on Criminal Policy and Research* 11(3–4): 347–377.
- Brantingham, P.L. and Brantingham, P.J. (1984) Burglar mobility and crime prevention planning. In: R. Clarke and T. Hope (eds.) *Coping with Burglary*. Boston, MA: Kluwer-Nijhoff, pp. 77–95.
- Brantingham, P.J. and Brantingham, P.L. (2008) Crime pattern theory. In: R. Wortley and L. Mazerolle (eds.) *Environmental Criminology and Crime Analysis*. Cullompton, UK: Willan, pp. 78–93.
- Budd, T. (1999) *Burglary of Domestic Dwellings: Findings from the British Crime Survey*, Home Office Statistical Bulletin, 4(99). London, UK: Home Office.
- Clarke, R. (2008) Situational crime prevention. In: R. Wortley and L. Mazerolle (eds.) *Environmental Criminology and Crime Analysis*. Cullompton, UK: Willan, pp. 178–194.

- Cornish, D. and Clarke, R. (1986) *The Reasoning Criminal: Rational Choice Perspectives on Offending*. New York: Springer-Verlag.
- Farrell, G. (1995) Preventing repeat victimization. In: M. Tonry and D.P. Farrington (eds.) *Building a Safer Society: Strategic Approaches to Crime Prevention*, Crime and Justice: A Review of Research, Vol. 19. Chicago, IL: University of Chicago Press, pp. 469–534.
- Farrell, G. (2005) Progress and prospects in the prevention of repeat victimization. In: N. Tilley (ed.) *Handbook of Crime Prevention and Community Safety*. Cullompton, UK: Willan, pp. 145–172.
- Farrell, G. and Pease, K. (1993) *Once Bitten, Twice Bitten: Repeat Victimization and its Implications for Crime Prevention*, Crime Prevention Unit Paper 46. London, UK: Home Office.
- Farrell, G. and Pease, K. (eds.) (2001) Why repeat victimization matters. In: *Repeat Victimization*, Crime Prevention Studies. Vol. 12. Monsey, NY: Criminal Justice Press, pp. 1–4.
- Farrell, G. and Pease, K. (2006) Preventing repeat residential burglary. In: B.C. Welsh and D.P. Farrington (eds.) *Preventing Crime: What Works for Children, Offenders, Victims, and Places*. Belmont, CA: Wadsworth.
- Farrell, G. and Pease, K. (2007) The sting in the British Crime Survey tail: Multiple victimizations. In: M. Maxfield and M. Hough (eds.) *Surveying Crime in the Twenty First Century*, Crime Prevention Studies. Vol. 22. Cullompton, UK: Willan, pp. 33–53.
- Farrell, G., Sousa, W.H. and Weisel, D.L. (2002) The time window effect in the measurement of repeat victimization: A methodology for its measurement and an empirical study. In: N. Tilley (ed.) *Analysis for Crime Prevention*, Crime Prevention Studies. Vol. 13. Monsey, NY: Criminal Justice Press, pp. 15–27.
- Farrell, G., Tseloni, A. and Pease, K. (2005) Repeat victimization in the ICVS and the NCVS. *Crime Prevention and Community Safety* 7(3): 7–18.
- Feldacker, C., Ennett, S.T. and Speizer, I. (2011) It's not just *who you are* but *where you live*: An exploration of community influences on individual HIV status in rural Malawi. *Social Science and Medicine* 72(5): 717–725.
- Grove, L. and Farrell, G. (in press) Once bitten, twice shy? Repeat victimization and its prevention. In: B. Welsh and D.P. Farrington (eds.) *The Oxford Handbook of Crime Prevention*. Oxford: Oxford University Press.
- Johnson, S.D. (2008) Repeat burglary victimization: A tale of two theories. *Journal of Experimental Criminology* 4(3): 215–240.
- Johnson, S.D. and Bowers, K. (2004) The burglary as clue to the future: The beginnings of prospective hot-spotting. *European Journal of Criminology* 1(2): 237–255.
- Johnson, S.D., Bowers, K. and Hirschfield, A.F.G. (1997) New insights into the spatial and temporal distribution of repeat victimization. *British Journal of Criminology* 37(2): 224–241.
- Johnson, S.D. et al (2007) Space–time patterns of risk: A cross-national assessment of residential burglary victimization. *Journal of Quantitative Criminology* 23(3): 201–219.
- Laycock, G. (2001) Hypothesis-based research: The repeat victimization story. *Criminal Justice* 1(1): 59–82.
- Laycock, G. and Farrell, G. (2003) Repeat victimization: Lessons for implementing problem-oriented policing. In: J. Knutsson (ed.) *Problem-Oriented Policing: From Innovation to Mainstream*, Crime Prevention Studies, Vol. 15. Monsey, NY: Criminal Justice Press, pp. 150–175.
- Leggett, T., Alvazzi del Frate, A., Pietschmann, T. and Kunnen, S. (2005) *Why Fighting Crime Can Assist Development in Africa: Rule of Law and Protection of the Most Vulnerable*. Pretoria, South Africa: Institute for Security Studies.
- Marenin, O. (1997) Victimization surveys and the accuracy and reliability of official crime data in developing countries. *Journal of Criminal Justice* 25(6): 463–476.
- Mawby, R.I. (2001a) The impact of repeat victimisation on burglary victims in East and West Europe. In: G. Farrell and K. Pease (eds.) *Repeat Victimization*, Crime Prevention Studies, Vol. 12. Monsey, NY: Criminal Justice Press, pp. 69–82.
- Mawby, R.I. (2001b) *Burglary*. Cullompton, UK: Willan.
- National Statistical Office of Malawi. (2000) *1998 Population and Housing Census 1998*. Zomba, Malawi: National Statistical Office of Malawi.
- National Statistical Office of Malawi. (2005a) *Integrated Household Survey (IHS-2), 2004–2005 Vol. I: Household Socio-Economic Characteristics*. Zomba, Malawi: National Statistical Office of Malawi.
- National Statistical Office of Malawi. (2005b) *National Statistical Office, Malawi Integrated Household Survey (IHS-2) 2004–2005: Basic Information Document*. Zomba, Malawi: National Statistical Office of Malawi.
- Naudé, C.M.B., Prinsloo, J.H. and Ladikos, A. (2006) *Experiences of Crime in Thirteen African Countries: Results from the International Crime Victim Survey*. Turin, Italy: UNODC-UNICRI.

- Pease, K. (1998) Police Research Group Paper, No. 90, *Repeat Victimization: Taking Stock*. London, UK: Home Office.
- Pelser, E., Burton, P. and Gondwe, L. (2005) *Crimes of Need: Results of the Malawi National Crime Victims Survey*. Pretoria, South Africa: Institute for Security Studies.
- Polvi, N., Looman, T., Humphries, C. and Pease, K. (1991) The time course of repeat burglary victimization. *British Journal of Criminology* 31(4): 411–414.
- Ratcliffe, J.H. and McCullagh, M.J. (1999) Burglary, victimisation and social deprivation. *Crime Prevention and Community Safety* 1(2): 37–46.
- Rengert, G. and Wasilchick, J. (1985) *Suburban Burglary: A Time and a Place for Everything*. Springfield, IL: Thomas.
- Repetto, T. (1974) *Residential Crime*. Cambridge, MA: Ballinger.
- Republic of Malawi and The World Bank. (2006) *Malawi Poverty and Vulnerability Assessment: Investing in Our Future*. Republic of Malawi and The World Bank, http://www.aec.msu.edu/fs2/mgt/caadp/malawi_pva_draft_052606_final_draft.pdf.
- Sagovsky, A. and Johnson, S.D. (2007) When does repeat burglary victimization occur? *Australian and New Zealand Journal of Criminology* 40(1): 1–26.
- Shaw, M. (2001) Time heals all wounds? In: G. Farrell and K. Pease (eds.) *Repeat Victimization*, Crime Prevention Studies, Vol. 12. Monsey, NY: Criminal Justice Press, pp. 165–197.
- Shaw, M. and Pease, K. (2000) *Research on Repeat Victimization in Scotland: Final Report*. Edinburgh, UK: The Scottish Executive Central Research Unit.
- Sparks, R. (1981) Multiple victimisation: Evidence, theory and future research. *Journal of Criminal Law and Criminology* 72(2): 762–778.
- Sparks, R.F., Genn, H.G. and Dodd, D.J. (1977) *Surveying Victims: A Study of the Measurement of Criminal Victimization, Perceptions of Crime and Attitudes to Criminal Justice*. London, UK: Wiley.
- Townsley, M., Homel, R. and Chaseling, J. (2000) Repeat burglary victimisation: Spatial and temporal patterns. *Australian and New Zealand Journal of Criminology* 33(1): 37–63.
- Townsley, M., Homel, R. and Chaseling, J. (2003) Infectious burglaries: A test of the near repeat hypothesis. *British Journal of Criminology* 43(3): 615–633.
- Trickett, A., Osborn, D., Seymour, J. and Pease, K. (1992) What is different about high crime areas? *British Journal of Criminology* 32(1): 81–89.
- Tseloni, A. (2006) Multilevel modeling of the numbers of property crimes: Household and area effects. *Royal Statistical Society: Series A* 169(2): 205–233.
- Tseloni, A. and Pease, K. (2003) Repeat personal victimization: ‘Boosts’ or ‘flags’? *British Journal of Criminology* 43(1): 196–212.
- Tseloni, A. and Pease, K. (2010) Property crimes and repeat victimization: A fresh look. In: S. Shoham, P. Knepper and M. Kett (eds.) *International Handbook of Victimology*. Boca Raton, FL: Taylor & Francis, pp. 127–149.
- van Dijk, J.J.M. (2001) Attitudes of victims and repeat victims toward the police: Results of the international crime victims survey. In: G. Farrell and K. Pease (eds.) *Repeat Victimization*, Crime prevention studies, Vol. 12. Monsey, NY: Criminal Justice Press, pp. 27–52.
- Winkel, F.W. (1998) Fear of crime and criminal victimization. *British Journal of Criminology* 38(3): 473–484.