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Situational prevention and public transport crime in El Salvador

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Abstract

By any standard, there is a serious problem of crime on the public transport system in El Salvador. Guided by crime opportunity theory, this study undertook a rapid assessment of the problem consisting of a systematic observation of public transport in El Salvador and focus group discussions with passengers, bus operators, police and bus company owners/managers. The purposes were (1) to describe the main forms of crime and disorder afflicting the system, (2) to identify features of the system that contribute to the high levels of crime and disorder, and (3) to identify preventive measures, consistent with international experience. A program of situational crime prevention measures was identified which consisted of two main kinds: (1) measures relating to the operations of the bus system as a whole, intended to help to create a more orderly and secure transport environment and, (2) more specific measures designed to reduce opportunities for crimes occurring on buses or at bus stops, such as homicides, robberies, and sexual assaults on women. Future research and implementation of the preventive measures are discussed.

Keywords: Public transport, Rapid assessment, Crime opportunity theory, Situational crime prevention

Background

Crime and public transport in El Salvador

El Salvador is a Central American country with a population of 6.3 million. It has one of the highest murder rates in the world, due largely to widespread gang warfare—a residue of the civil war between 1979 and 1992 and also, as argued by some (Decker and Pyrooz 2010), the result of the deportation of thousands of Salvadoran gang members from the US in the mid-1990s. The Instituto de Medicina Legal (2013) reports that 3.3 % of all homicides in El Salvador during the 5-years of 2008–2013 occurred “within a public transit vehicle”. This amounts to 715 homicides, a disproportionately large number for such a small country.¹

Excluding taxis whose fares are beyond the resources of most of the travelling public, public transport in El Salvador is provided entirely by buses. These buses are owned

and operated by private bus companies that are authorized by the Vice-Ministry of Transport (VMT) to provide service on specific routes. The VMT subsidizes the bus owners so they can provide service to passengers at a maximum fare of 25 cents per passenger on any given route.

Two kinds of buses provide service on three types of bus routes (see Table 1) and about three quarters of these buses serve the municipalities forming the Metropolitan Area of San Salvador.

Official statistics on public transport crime are not available, but other data indicate that crime is a serious problem on the bus system. A victimization survey conducted by the Escuela Superior de Economía y Negocios (ESEN) (2013) found that about 20 % of all theft and robberies in El Salvador occurred in a bus and an additional 21 % occurred at bus stops. 42 % of all crimes in El

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¹ In the latest manifestation of this violence, Reuter reports that El Salvador's bus drivers went on strike on July 27 2015 following the murder of 5 bus drivers and one other transport worker. <http://www.reuters.com/article/2015/07/28/el-salvador-gangs-idUSL1N1072MZ20150728?feedType=RSS&feedName=industrialsSector>.

Table 1 Number of buses and routes served

	Routes				Vehicles			
	Urban	Inter-urban	Inter-departmental	Total	Urban	Inter-urban	Inter-departmental	Total
Bus	209	384	342	935	1243	3046	3114	7403
Microbus	122	114	38	274	1066	2237	796	4099

Salvador involving the use of a weapon occurred at bus stops. It estimated that in 70 % of these incidents the perpetrators stole something that belonged to the victims. The total theft losses amounted to \$25.3 million, equivalent to an average loss of \$127.00 per incident.²

The present study

The present study³ was intended to obtain a sufficient understanding of crime on El Salvador's buses to identify preventive solutions. It sought answers to the following questions:

1. How does the organization and structure of the bus system generate opportunities for crime and disorder?
2. What are the sources of fear among bus passengers?
3. What should be done to reduce victimization and fear of crime, in the buses and at public transport facilities?
4. What lessons can be learned for El Salvador from the experience of other countries in reducing the levels of crime, disorder and fear associated with public transport?

Theoretical framework

Situational crime prevention has been defined as the science and the art of reducing opportunities for crime (Clarke 1997, 2005). It is a science because criminologists have developed numerous theories and concepts to assist the practical work of reducing opportunities for crime and have accumulated and systematized knowledge about the nature and effects of interventions. They have also made unusual efforts to communicate their findings in ways that practitioners would find useful. However,

situational prevention is still an art because in dealing with specific crime problems practitioners will rarely know immediately what should be done. Instead, they will usually have to interpret the principles of situational prevention at each stage of the intervention: when understanding the opportunity structure giving rise to the crime, when identifying the range of suitable interventions, when thinking about the costs and benefits of possible interventions, when developing an implementation plan and when seeking to evaluate the results. The fact is that every specific crime problem has unusual, even unique features that require practitioners to bring their own knowledge and experience to bear in diagnosis of the problem and the identification and implementation of appropriate and timely preventive interventions.⁴

Broadly conceived, situational crime prevention includes designing out crime, crime prevention through environmental design and problem-oriented Policing (Clarke, 2010). Not only have many successes been achieved in reducing specific forms of crime through these approaches, but they are well-supported by findings from crime opportunity theories, all of which focus on the immediate situational causes of crime (see Felson and Clarke 1998; Wortley and Mazerolle 2008; Natarajan 2011). They do not cover the predisposing factors in crime arising from the psychological and sociological backgrounds of the offenders, or the current conditions of society—poverty, discrimination, corruption—all of which are commonly thought to fuel crime. The practical advantage of focusing on situational causes is that, while the authorities responsible for the bus system in El Salvador have almost no scope for altering predisposing factors, they can powerfully influence the situational factors that promote crime. These factors are also much easier to alter

² The Overseas Security Advisory Council (OSAC) of the United States Department of State warns visitors to El Salvador to avoid public transportation, as it has become too dangerous for city and country commuting. According to the advisory note, "passengers on public buses are frequently robbed en route, at roadblocks and at bus stops. Would-be muggers and gang members have become so brazen in their attacks that they are known to keep to a daily schedule, riding city buses from one stop to the next, mugging and committing criminal acts with impunity".

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⁴ Practitioners can accomplish these tasks more easily when working in developed countries, with their multitude of established systems, criminal justice—related or not. It is more difficult to work in less developed countries where the institutions of civil society are more rudimentary and fragile. In fact, prior to this journal issue, few systematic efforts to implement situational prevention in developing countries have been reported. An important impediment would be the lack of available data needed for designing and implementing projects. Reliable crime data might not even be available. Consequently, those seeking to implement situational prevention would often have to collect their own data, which might be an impossible obstacle if they sought at the same time to meet the usual scientific standards of rigor.

than predisposing factors, and the changes made, unlike those made to alter predispositions, can achieve immediate results. These points can be illustrated by a concrete example. It is widely recognized that bus routes that serve impoverished parts of a city are generally at higher risk of crime than those that do not (Newton 2014). This might suggest that crime on buses would be reduced by societal change, such as reducing unemployment and poverty, but achieving these social changes is well beyond the capacity of those running the bus system. What they can do instead, however, is to introduce additional security for the buses and bus stops in the high crime areas through situational, opportunity-reducing measures (Smith and Cornish 2006; Ceccato 2014). Social and economic progress are priorities for developing economies such as El Salvador, but it is also important to address directly urban crimes including transport crimes that threaten security and public safety.

Methodology

When working in developing economies, public health practitioners have used rapid assessment methodologies (RAM) to obtain the data needed to assist decision-making about appropriate interventions (Beebe 2001; Trotter et al. 2001; Stimson et al. 2001; Fitch et al. 2004; McDonald 2005; Comiskey et al. 2012; Van Hout et al. 2013). RAM assists in identifying high risk populations, places, or sectors that need targeted interventions that will bring the most benefit. MacIntyre (1999) argues that RAM strikes a balance between methodologically appropriate and logistically feasible measures.

These reasons governed the choice of rapid assessment methods for obtaining the basic information needed for the study of the public transport system and the problems experienced of fear, crime and disorder. The particular methods chosen were qualitative in nature (Stimson et al. 2001) and consisted of (1) systematic observations of the bus system and (2) focus group discussions conducted with various stakeholders including passengers, bus operators and those responsible for the security of the bus system. In order to identify possible preventive measures, the findings of these two rapid assessment exercises were interpreted in the light of a review of the international literature on preventing public transport crime.

Systematic observation

Informed by the whole journey approach (Clarke and Smith 2000; Smith and Cornish 2006; Newton 2014), the systematic observation focused on environmental conditions that facilitate the commission of crimes against bus passengers or make them fearful of crime when waiting at bus stops and terminals and when travelling on the bus.

Passengers' experiences were observed at three stages:

1. Arriving at a terminal or a bus stop in order to board a bus.
2. Boarding a bus or microbus.
3. Travelling within a bus or microbus.

A total of 22 routes were observed. Eighteen bus and microbus routes were observed during six time slots over 5 weekdays from Monday to Friday; one route was observed over nine time slots during 1 day by three observers; and the three remaining routes were observed over one time slot each. This resulted in 120 observation occasions.

The routes were selected with the help of police officers in the 911 emergency service operated by the National Civilian Police (PNC). Routes selected were those with the largest numbers of emergency calls or calls for service to the 911 System. Eight observers were trained in the use of an observation guide and they were given safety tips while conducting observation. They worked in pairs and were assigned a specific route for the whole day. They boarded buses and minibuses at different points (i.e. at terminals and formal and informal bus stops) during the specified time slots. Time slots were separated by periods of at least 30 min during which the observers completed a form relating to the bus or microbus observed during the previous time slot. At the end of each day, the completed forms were checked by a supervisor for completeness and consistency.⁵

Focus group interviews

Focus group interviews were undertaken with four different groups of participants: passengers; bus drivers and fare collectors; public transport officials and police; and bus company owners/managers. A total of 156 individuals participated in 21 group discussions (for details see Table 2). Each discussion took about 2 h. As required by the USAID ethical board, informed consent was obtained

⁵ At bus stops, the observers spent the time needed to collect the following data: (1) type of property (residential and nonresidential) that was visible from the bus stop; (2) physical and social incivilities that were visible in and around the bus stop; (3) numbers of routes using the bus stop; (4) physical characteristics of the location of the bus stop; (5) number of people waiting for a bus or microbus at the bus stop and their sex and approximate ages, (6) presence of police or private security and whether a crime occurred at the bus stop while the observer was waiting there. Observers were randomly assigned to specific bus routes for each of 6 time slots during a day. They boarded a bus or microbus and completed the whole route. They recorded the total number of stops made by the bus either to collect or to drop passengers along the whole. Official stops are 500 meters apart but spacing of nonofficial ones varies more or less randomly. There were always other people waiting for the buses besides the observers. Observers acted as passengers and jotted notes in a small notebook. The possibility of trouble was minimal as observers did not board a bus on the same route on more than one occasion.

Table 2 Composition of the 21 focus groups

Participants	Participant profiles	# of groups	Males	Females	Total
Passengers	Employees	4	16	16	32
	Unemployed	2	6	6	12
	Retired	2	11	12	23
	University students	4	19	14	33
Drivers	Drivers	3	20	0	20
Police	Police officers (public security)	2	7	5	12
	Police officers (transit)	1	7	1	8
Owners	Interdepartmental routes	1	6	0	6
	Urban bus routes	1	5	0	5
	Urban microbus routes	1	4	1	5
	Total	21	101	55	156

from the participants and they were assured of anonymity and safety.⁶

The focus group interviews covered a wide range of topics deemed relevant to understanding patterns of transit crime and to identifying preventive solutions. For all groups, the topics covered were (1) transit patterns; (2) the nature of crime victimizations; (3) fear of crime and its sources; (4) disorder and the nature of incivilities; (5) quality of public transport; (6) government/transport authority policies, including suggestions for preventing crime on the public transport system.

Summary of the findings of the systematic observations

An analysis of the external environment surrounding the bus stops and bus terminals, and the internal environment of buses and minibuses identified the conditions that facilitate the commission of crimes against public transport users or result in users feeling unsafe. They are presented below.

While bus stops are supposed to provide a comfortable shelter for passengers waiting for the bus, only about one-third meet minimum standards. The floor of the remainder is often unpaved and strewn with litter, and the structure is covered in graffiti. Crude, hand-written notices advertising various goods and services are pasted everywhere. Lighting is absent or inadequate. The

locations of the stops are characterized by intense pedestrian activity, disorder and incivility. Beggars, drunks and vagrants are frequently present. There is graffiti on nearby walls and structures and street vendors loudly hawk their goods (see Fig. 1; “Appendix 1”).

Bus stops are frequently over-crowded, particularly during the commute, which can result in passengers pushing each other out of the way aggressively or carelessly. Overcrowding also provides the opportunity for thieves and sexually-motivated offenders (see “Appendix 1”) and it is a particular source of anxiety for women who are the largest group of bus users (Fig. 2).

Police presence in and around bus stops is insufficient. At almost half the bus stops observed no police officers or police patrols were present, which facilitates crime. In fact, a crime incident or some form of antisocial behavior was noted at one in 20 bus stops observed (Figs. 3, 4).

Almost two-thirds of buses or minibuses have no bell for passengers to announce their intention to disembark or to alert the driver in case of emergency. Common on all buses is the playing of loud and suggestive music, especially by young bus drivers, graffiti inside the buses (sometimes obscene), polarized windscreens and window glass, and interior advertisements that impair visibility.

Excessive numbers of unauthorized stops along bus (see “Appendix 1”) and microbus routes result in buses being driven at high speed to make up for time lost in the competition between buses for passengers (Fig. 5). Individuals who appear to be gang members often board at these unauthorized stops as well as vendors who are allowed to sell their wares on the bus (see “Appendix 1”). In addition, drivers and fare collectors are frequently rude to passengers. All of these problems affect the security of passengers and create conditions for the occurrence of crimes inside the buses. Verbal abuse, theft and robbery are the most common types of crimes against the person occurring inside buses and minibuses.

Summary of the findings of the focus group interviews

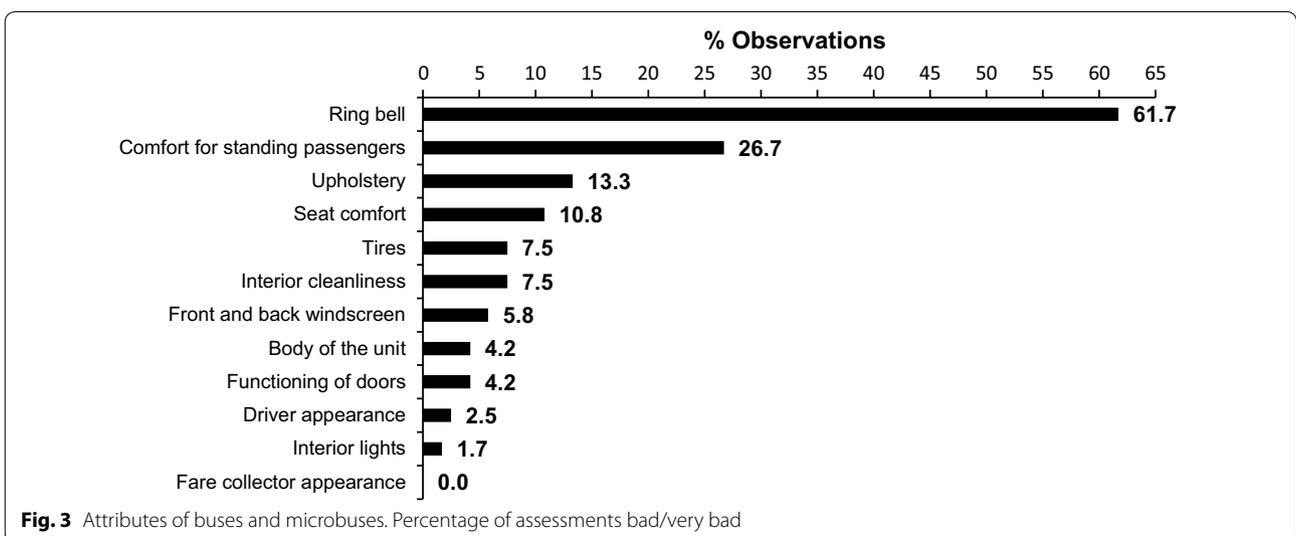
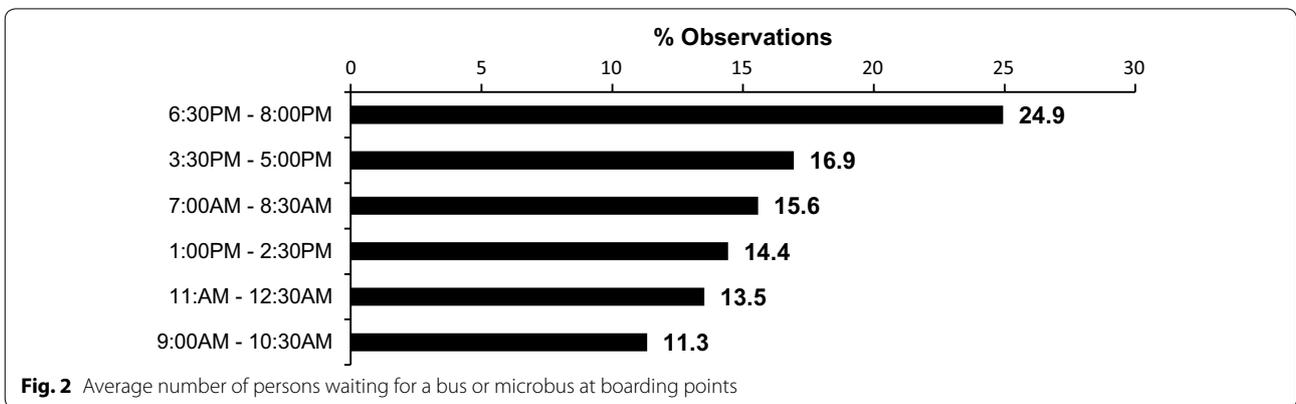
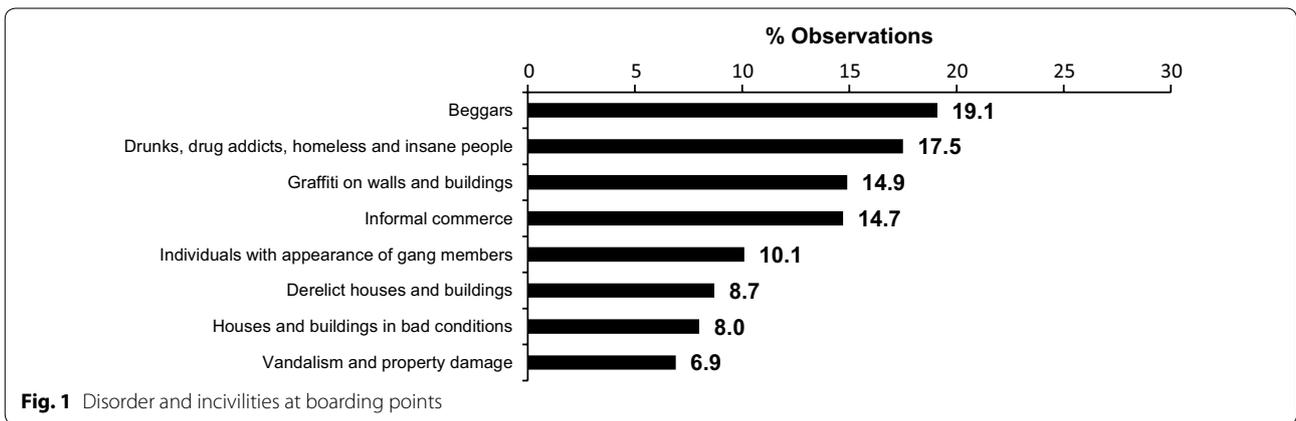
The focus group discussions yielded a wealth of information that is summarized below under the two headings of disorder and criminal activity.

Disorder

Buses

Focus groups described the bus system as chaotic and they cited numerous ways in which operators contribute to the prevailing disorder: (1) driving fast and hazardously, and constantly violating transit regulations; (2) skipping mandatory bus stops and picking-up and dropping-off passengers at unauthorized, unmarked and often dangerous locations; (3) frequently taking shortcuts or

⁶ The focus groups were held in different locations depending on the safety and convenience of the participants: FUSADES, FUSATE (for the retired), Coffee Shop (for the unemployed), Don Bosco University (for some students), League Clothing Factory (for some employed), Transport Cooperative of Zacatecoluca (for some bus owners), Transit Sub Directorate (for transit police).



expanding their runs to areas assigned to other routes; (4) delaying service at stops for prolonged periods of time, to wait for more passengers to arrive and fill up empty spaces; (5) permitting overcrowding.

It was repeatedly said that drivers get no salary or benefits, but keep a previously set percentage of the daily amount collected in fares. They give the remainder to their employers, who pre-establish a minimum

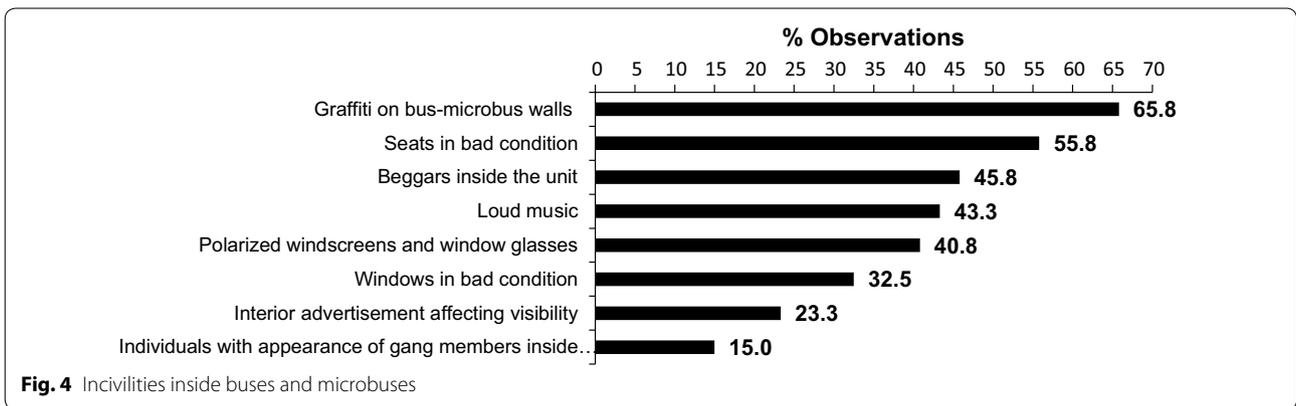


Fig. 4 Incivilities inside buses and minibuses

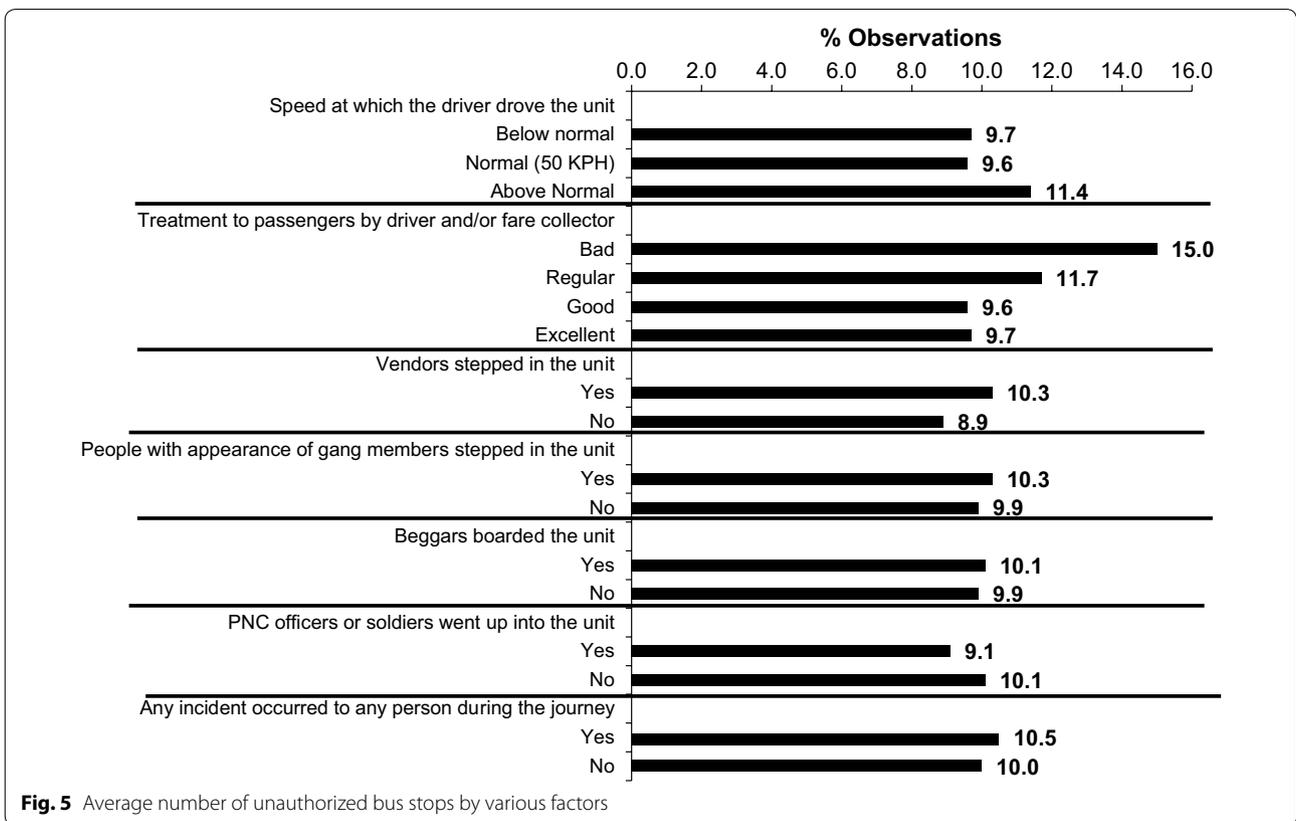


Fig. 5 Average number of unauthorized bus stops by various factors

acceptable amount. As a result, the drivers' main goal is to generate as much money as possible, transporting as many passengers as they can procure. This, in turn, was said to produce an overwhelming competitive environment in which buses race to board as many passengers as they can hold and do as many runs as they can, thus driving dangerously and unreliably.

The pressure on drivers was said to be further exacerbated by: (1) pedestrian negligence; (2) passenger demands to stop buses as close as possible to their destinations; (3) frequently heavy traffic and narrow streets;

(4) route saturation; (5) fines imposed by their employers for not complying with over-reaching and subjective standards.

Buses were consistently said to be in bad cosmetic and mechanical condition, with missing or damaged seats, graffiti, noisy engines, litter accumulation, excessive exhaust smoke, and crackling sounds. These issues were mainly attributed to deficient vehicle maintenance and repair practices, derived from bus companies' unwillingness or incapacity to take appropriate care of their vehicles. The driver's clothes were also criticized as dirty and

sometimes gang-like. They frequently played loud music accompanied by discotheque lights.

Bus stops

Bus stops were unfailingly portrayed as disorderly. Most frequently cited were overcrowding, long lines of buses parked askew along bus stop sidewalks, and hordes of people running up and down the street to catch their buses. These issues were said to be caused by: (1) saturation of bus routes at the same stops and streets; (2) irregular service cycles; (3) long waiting periods; (4) street vendors taking over sidewalks and bus stops.

Additionally, bus stops were said to be in bad physical conditions, with damaged roofs, stolen or missing benches, potholes, graffiti and litter.

Interpersonal interactions

Public transportation was portrayed as a chaotic environment in which drivers' and passengers' behaviors are dictated by a particular subculture, where otherwise reprehensible actions are justified, tolerated, and even expected. Participants frequently cited scenarios that involved: (1) aggressive boarding and exiting, where the strongest passengers elbowed and pushed-away the weakest (women, children and the elderly); (2) rude and vulgar remarks by drivers; (3) unruly behavior by gang members; (4) verbal altercations between drivers and passengers that ultimately result in aggressive driving or skipping stops; (5) drivers not providing change or passengers trying to pay less than the fare.

Although driver misconduct was mainly attributed to the subcultural context in which they operate, also mentioned as triggers were long work hours, low pay and the stressful environment in which they work.

Lack of information for passengers

The bus system was described as complex and almost impossible to navigate without having used it before. Unmarked spots that function as popular bus stops, only known to regular passengers, were frequently cited as an example. Thus, the lack of appropriate signage showing routes and schedules was thought to contribute to chaos.

Enforcement of transit regulations

Corruption was noted to be the main reason for lack of enforcement of transit regulations and laws. Drivers claimed that police officers harass them and seek bribes in exchange for not issuing tickets. Transit officials, in turn, claimed that continued enforcement efforts are undermined by corrupt commanders and politicians that receive payoffs from bus companies. Bus company owners and administrators argued that enforcement is used by the ruling political party to drive out of business those not considered government allies.

Criminal activity

However dangerous are the bus stops, the most vulnerable location was said to be inside the bus and most crime accounts involved incidents that took place inside buses.

Most accounts of crime described property offenses, particularly thefts and robberies. Females and elderly passengers were mentioned as the most vulnerable victims. The most frequent targets of theft were cash, jewelry and mobile telephones. Crimes are committed by a variety of offenders, not only gang members, often using knives and handguns. Extortion and homicides were the only offenses exclusively linked to gangs. Robberies and thefts were described as planned and coordinated events, which generally involve the participation of a group of offenders, assigned with specific tasks and roles. Boarding and exiting locations were said to be selected to minimize detection and allow for target identification. Drivers and street vendors were often accused of being accomplices. Nevertheless, it was argued that drivers are easy victims for reprisals and thus they have little choice but to collaborate with criminals.

In some accounts, offenders were said to wear disguises or utilize the unsuspecting appearance of their job or outfit, to select and target victims. Both multiple and single victim robberies were said to be common, the former often involving a public announcement by perpetrators with instructions for their victims.

Although most *sexual incidents* were said to be male-on-female, some male-only victimization events were described. The most frequent transgressions against females involved unwanted sexual advances and perpetrators exploiting overcrowding to rub against or touch victims. Violent sexual crimes were not mentioned as frequently. Female passengers also complained about buses being filled with explicit music, decals and posters.

Extortion of owners by gangs was described as a serious problem. Perpetrators sometimes provide mobile telephones to initiate negotiations or use drivers as intermediaries. Incidents in which bus transit papers were taken for ransom were described. Proprietors, however, said that the most common threats involved murdering operators and burning buses. The amount of money that owners claimed was extorted weekly ranged from ten to thirty dollars per bus.

Bystanders were said not to intervene during crime incidents or report incidents. The reasons given were fear of reprisals, that bystanders were collaborating with perpetrators or that they had no confidence in the criminal justice system. Specifically, the public had little trust in the police who were seen to be corrupt, inefficient and infiltrated by criminal organizations. Police recognized that their response to crime is inadequate, but justified this by limited resources and strict police misconduct laws that make officers fearful to intervene satisfactorily. It was impossible,

however, to elicit consistent responses from police regarding institutional, centralized efforts to curb bus crimes.

Preventing crime, disorder and fear on El Salvador's bus system

The "rapid assessment" described above has produced a consistent picture of a dysfunctional, crime-ridden bus system in El Salvador. The direct observations of the system undertaken by eight trained observers confirmed the existence of much crime and disorder on the system and identified many contributing situational factors of the system environment including inadequate policing; the poor condition of bus units; overcrowding; chaotic conditions at bus stops; the involvement of gangs and vendors in crime; operators' misbehavior and failure to comply with laws.

The focus group interviews, drawing upon the views and experience of 156 assorted participants—passengers, bus operators, police, transport officials and bus owners—produced a detailed and multi-faceted description of the problems. Among the most serious problems identified were the concession system for bus routes, a general noncompliance of rules and regulations and lack control over the extortion by gangs. Before discussing the preventive implications of the findings, two important limitations of the information produced by the rapid assessment should be noted. First, little was learned about extortion committed by gangs against bus proprietors beyond the fact that this was widespread and serious. Perhaps the rapid assessment should have included a third component consisting of one-on-one interviews with bus owners about their own experiences of extortion. The owners might have been more willing to speak openly in private interviews than they were in the more "public" context of the focus group discussions. A second limitation of the rapid assessment is that it did not provide a clear picture of how much crime was opportunistic, committed by ordinary street criminals and how much of it was planned and carried out deliberately by gang members. Another component of the rapid assessment might therefore usefully have included a review of newspaper archival materials to discover what light this could shed on the magnitude and extent of the gang related transport crime.

The international literature on the prevention of public transport crime

Despite these limitations, the rapid assessment suggested many possible preventive measures, especially when viewed through the lens of situational prevention. In order to expand the possibilities for prevention, however, the international literature was scanned to identify measures found successful in reducing transport crime elsewhere, particularly in bus systems. All forms of public transport crime were included—trains, subways, trams,

jitneys (a small motor vehicle, such as a bus or van that transports passengers on a route for a small fare) and buses, but not taxis or airline travel.⁷

The literature review proved valuable in expanding the repertoire of preventive measures that might be usefully employed in El Salvador, though it was recognized that measures that work elsewhere will not necessarily work in El Salvador. In each case of their application, therefore, detailed understanding must be acquired of the situational conditions that permit the specific crime to be committed. Despite this caveat, the authors sought to provide a set of detailed recommendations to meet the sponsors' expectations that the study would not simply be an academic exercise, but would yield practical results. In making these recommendations, the authors interpreted findings from the international literature to fit the understanding they had gained through the rapid assessment of the bus system in El Salvador and its crime problems. This sometimes meant going beyond a strict interpretation of the international literature. In other words, the authors sought to recommend a wide repertoire of concrete preventive measures for stakeholders to assess for feasibility and acceptability before these were assessed for implementation. Implementation is discussed further below.

Summary of recommendations

A program of situational crime prevention measures was identified which consisted of two main kinds: (1) measures relating to the operations of the bus system as a whole, intended to help to create a more orderly and secure transport environment and, (2) more specific measures designed to reduce opportunities for crimes occurring on buses or at bus stops. The recommendations fall under seven broad headings below:

1. Any informality in a public transport system tends to be exploited by offenders. It is therefore important to give the appearance of a formal unified system by measures such as those listed in Table 3.
2. The system of allocating bus routes to bus companies was widely criticized as being at the heart of the chaotic transport system, resulting in buses competing for passengers. In many cases different bus companies share the right to operate buses on the same

⁷ Some 500 studies were identified, slightly more than half in the academic literature and the remainder in the gray literature, which consisted mostly of reports by public transport providers. Nearly all the studies were undertaken in developed countries and most were published within the past 40 years. Most of the literature was concerned with describing and explaining transport crime; few studies dealt directly with prevention of crime. A large majority of all the studies focused on trains and subways, with only 40 studies focused on bus crimes (see "Appendix 2"). Another 20 articles and reports that focused on public transport crime prevention (also listed in "Appendix 2") included some mention of crime in buses.

Table 3 Measures to increase the appearance of a formal unified bus system

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- a. Require staff to wear uniforms and tags displaying their ID numbers
 - b. Paint buses and bus stop shelters in standard colors with the system logo
 - c. Eliminate informal pick-up and drop-off points—except at night in places where there is a high risk of crime
 - d. Post signs throughout the system with prohibited behaviors
 - e. Prohibit vendors from selling goods on the bus
 - f. Require buses to be kept in good condition and be well-maintained
-

route. This competitive environment was said to generate overcrowding, stimulate dangerous driving, and cause passenger mistreatment. Focus groups suggested that routes be redesigned in order to avoid different routes stopping at the same bus stops and to increase the number of buses that work high-demand routes during peak hours. Some passengers suggested that the troublesome competitive environment could be reduced by awarding the exclusive concession of routes to individual companies. They also argued that more demanding requirements should be established for route concessions because routes sometimes are awarded to companies or individual bus owners that do not possess the administrative and financial means to guarantee the proper operation of buses.

3. Many laws and regulations govern the bus system in El Salvador, but laws and regulations are not enough on their own to ensure compliance—they also have to be enforced. In El Salvador, the main responsibility for enforcement in the context of the bus system rests with the local police. However, the local police seem to exercise this responsibility sporadically—they do not even collect data on crimes committed on the system. There is a clear need therefore to strengthen police enforcement of laws and of regulations. Another important way to improve enforcement would be for the transport authorities to create a new class of employees—inspectors of buses—who would continually monitor the buses. They would have wide powers to issue fines to bus companies and operators for infringements of regulations.
4. Too much opportunity for corruption and theft exists in the present cash-based fare-collection system. The relatively large amount of cash collected by the bus driver or fare collector also attracts robbers. Introduction of a system of advance purchase of tickets, before boarding the bus, should be given serious consideration.
5. Surveys have consistently found that women and the elderly often experience fear when travelling on pub-

lic transport. Measures that might reduce fear are shown in Table 4.

6. In bus systems around the world, bus drivers (and fare collectors where these are employed) are responsible not only for operating the bus safely, but also for maintaining order and preventing crime on their vehicles. However, this study turned up much evidence that many operators contribute to crime problems on the buses and consistently fall short of expectations regarding security. It was even said that bus drivers often collude with criminals and are themselves gang members. This suggests that much greater control needs to be exerted over operators, and more should be done to help those operators who try to fulfill a security function. Possible ways of achieving these objectives are shown in Table 5.
7. Finally, it is recommended that a Research and Planning Unit should be established, preferably in a University and staffed by appropriately-trained. This could be given the responsibility to:
 - a. Conduct regular victim surveys of passengers (and also operators) to determine if they have been criminally victimized on the bus system and by what kind of crime.
 - b. Continuously assess the likely value of new crime prevention measures to reduce bus-related crimes.
 - c. Formulate an annual implementation plan for reducing bus crime. This should specify the measures to be implemented and a timetable for this to be done.
 - d. Publish an annual report with the victim survey results and a detailed list of crime reduction actions taken during the past year and those scheduled for the forthcoming year.

Table 4 Measures to reduce fear

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- a. Improve lighting at bus stops and terminals and on pathways to bus stops
 - b. Install new-style bus shelters (clear safety glass, brightly lit) and remove posters on the windows to increase natural surveillance
 - c. Trim bushes/trees near bus stops to increase visibility
 - d. Discourage loitering at bus stops
 - e. Install emergency phones at bus stops
 - f. Install an electronic system to provide real-time information about wait times for passengers at bus stops
 - g. Install CCTV where possible at bus stops and in terminals. The cameras need to be well-advertised and well protected against vandalism
 - h. Increase the numbers of buses at busy periods to reduce overcrowding
 - i. Designate “female-only” buses on very crowded bus routes
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Table 5 Empowering bus drivers to perform a security function

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- a. Initiating background checks for all those applying to be bus operators
 - b. Training all operators in security procedures and in conflict avoidance techniques
 - c. Undertaking regular checks of buses and bus drivers, which could be done by the inspectors whose employment is recommended above
 - d. Supplying bus drivers with emergency phones
 - e. Forbidding passengers from talking to the driver when the bus is moving
 - f. Installing CCTV cameras on buses to help drivers to watch passengers
 - g. Appointing security guards to accompany drivers on dangerous late-night routes with frequent unscheduled stops
-

Depending on the research skills of those appointed, the Unit might also undertake more detailed studies of particularly troubling crime problems afflicting the system. The studies would provide the kind of detailed information required for designing and implementing situational prevention measures. Concerning the murders that plague the bus system, for example, it is not clear at present how these are committed. Who are the offenders? Are they mostly gang members? How many are involved in a typical incident? What weapons do they use? What are the typical methods or modus operandi involved in committing the crime? Where do these crimes occur and what features of the locations help the criminals? How often do bus operators appear to be in collusion with the criminals? How many perpetrators are caught? How do they escape? Similar questions need to be answered for other crimes that are common on the system: robberies and extortion, harassment of women, assaults on drivers and fare collectors, etc. The answers to these questions provide the kind of information that is needed in implementing situational crime prevention and they can only be provided by a continuing program of crime specific research.

Implementation of the recommendations

Anchored in a rapid assessment of crime, disorder and fear on the buses, the study reported above has met its principal goal of producing recommendations to deal with these problems. Which of the recommendations, if any, will be implemented depends on a series of further steps. First, the recommendations must be rigorously assessed for practicality and feasibility. This will require the participation of a wide variety of stakeholders—governmental agencies such as the VMT directly involved with overseeing and running the transport system, NGOs, the police, staff unions, business organizations, the media and representatives of the public. A Spanish language report has been issued⁸ and a public meet-

ing has been held to make the parties aware of the report and its recommendations, but no detailed discussions of the recommendations has yet been undertaken. Assuming that these discussions do take place, a second step would be to develop an implementation plan that would include resources needed, the agencies responsible for implementing each of the agreed recommendations, a timetable of actions etc. The third step would consist of the actual implementation of agreed measures with a detailed record of time taken to implement each of the recommendations, problems encountered and how these were overcome or not. The fourth and final step would consist of an assessment of the effectiveness of each of the measures implemented.

An extensive literature accumulated in developed countries has demonstrated how each of these stages is fraught with difficulties and disappointments (Homel and Homel 2012; Ekblom 2012; Tilley 1993). Given the degree to which the problems of public transport in El Salvador have been allowed to degenerate, and the magnitude of the task and the resources needed to retrieve the situation, it must be questioned whether the public and political commitment exists to implement the necessary preventive measures.

Conclusions

The rapid assessment undertaken in this study has shown that this approach, widely used in the public health field, can usefully be applied in studying crime in developing countries. The assessment documented the serious nature of the crime on El Salvador's public transport system and led to the identification of numerous ways which crime, disorder and fear might be reduced on the buses. While implementing this program will require a long-term effort, involving the active contribution of many stakeholders and a substantial investment of government funds, the rewards are likely to be commensurate with the effort. Not only would crime on the bus system be reduced to manageable proportions, but given the salience of buses in the life of El Salvador, there is reason to hope that these benefits might diffuse to the remainder of the country, with untold beneficial consequences for the people.

Authors' contributions

Mangai Natarajan participated in all stages of the research, including designing, review of literature and wrote the manuscript. Ron Clarke, consultant to the research project and assisted in drafting the manuscript. Carlos Carcach, carried out observation research, provided the figures Carlos Ponce, carried out focus group discussion and reported findings. Margarita Beneke De Sanfeliu managed the data collection for the research. Dolores Escobar Polanco, Mario Chavez, Carlos Mauricio Arturo Shi carried out focus group discussion.

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⁸ This report can be accessed at <http://bit.do/PrevencionCrimenTransportePublico>.

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Competing interests

The authors declare that they have no competing interests.

Appendix 1: problems of the bus system

Overcrowding



Vendors in buses



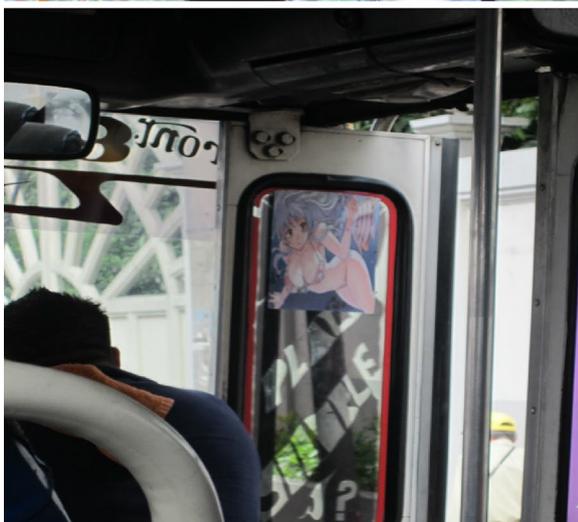
Open Cash Box



Unauthorized Bus Stop



Driver's Compartment



Appendix 2: studies on bus crime identified in the review of the international literature on the prevention of public transport crime

Allan, D., & Volinski, J. (2001). *Cops, cameras, and enclosures: a synthesis of the effectiveness of methods to provide enhanced security for bus operators*. Tampa, FL: National Center for Transit Research, University of South Florida.

Armstrong-Wright, A. (1993). *Public transport in third world cities*. Transport Research Laboratory, Department of Transport. State of the Art Review10. London: HJVL Stationery Office.

Atkins, S.T. (1989). *Critical paths: designing for secure travel*. London: Design Council.

Baker, J., & Bewick, I. (2001). *Personal security on public transport final report prepared for Mersey travel*. Bristol, UK: Transport and Travel Research Ltd.

Balog, J., Devost, M., & Sullivan, J. (2003). *Public transportation security: volume 1: community of threats: a guide. tcrp report 86*. Washington, DC: Transportation Research Board, National Research Council.

Boyle, D. K. (1994). Jitney enforcement strategies in New York City. *Transportation Research Record*, 1433, 177–84.

Burrell, A. (2007). *Violence on and around public transport*, London: UCL Jill Dando Institute, University College London.

Ceccato, V. (2014). Safety on the move: Crime and perceived safety in transit environments. *Security Journal*, 27(2), 127–131.

Chockalingam, K., & Vijaya, A. (2008). Sexual harassment of women in public transport in Chennai city: A victimological perspective. *The Indian Journal of Criminology & Criminalistics*, 3, 167–184.

Chui, W. H., & Ong, R. (2008). Indecent assault on the public transport in Hong Kong. *International Journal of Law, Crime and Justice*, 36, 2–14.

Clark, P., & Crous, W. (2002). Public transport in metropolitan Cape Town: past, present and future. *Transport Reviews*, 22(1), 77–101.

Clarke, R.V.G. (Ed.) (1996). *Preventing mass transit crime*. Crime prevention studies, volume 6. Lynne Rienner Publishers.

Countermeasures Assessment and Security Experts (2007). *Public transportation passenger security inspections: a guide for policy decision makers. TCRP report 86; Public Transportation Security, volume 13*. Washington, DC: Transportation Research Board.

Crime Concern (2004). *People's perceptions of personal security and their concerns about crime on public transport: research findings*. London: Department for Transport.

Delbosc, A., & Currie, G. (2012). Modelling the causes and impacts of personal safety perceptions on public transport ridership. *Transport Policy*, 24, 302–309.

- DeGeneste, H.I., & Sullivan, J.P. (1994). *Policing transportation facilities*. Springfield, IL: Charles C. Thomas.
- Department for Transport (DfT). (2010). *Estimated costs to society of crime on public transport in England in 2006/07: Final report on findings*. London: DfT
- Department of the Environment, Transport, and the Regions (DETR). (2000). *Women and public transport: the checklist. guideline no. 1, gender auditing: An overview*. Wetherby, UK: DETR.
- Desai, P., Keyy, J., & Sykes, W. (2009). *Passengers' perceptions of personal security on public transport—qualitative research report*. London: Department of Transport.
- Easteal, P., & Wilson, P. (1991). *Preventing crime on transport: rail, buses, taxis and planes*. Canberra: Australian Institute of Criminology.
- Easton, H., & Smith, F. (2003). *Getting there: reducing crime on public transport*. London: NACRO.
- Felson, M., Belanger, M., Bichler, G., Bruzinski, C., Campbell, G., Fried, C., Grofik, K., Mazur, I., O'Regan, A., Sweeney, P., Ullma, A., & Willaims, L. (1996). Redesigning hell: preventing crime and disorder at the port authority bus terminal (pp 5–93). In R. Clarke (Ed.). *Preventing mass transit crime*. Crime prevention studies (Vol 6). Monsey, NY: Willow Tree Press.
- Ferrell, C.E., Mathur, S., Meek, J., & Piven, M. (2012). *Neighborhood crime and travel behavior: an investigation of the influence of neighborhood crime rates on mode choice—phase II*. San Jose, CA: Mineta Transportation Institute, College of Business, San Jose State University.
- Friedman, D.M. (2003). *Security measures in the commercial trucking and bus industries*. Washington, DC: Transportation Research Board.
- Goodwill, J.A., Reep, A., & Pine, R. (2012). *Improving bus transit safety through rewards and discipline*. TCRP Synthesis, 97. Washington, DC: Transportation Research Board.
- Great Britain. Department of Transport. (2012). *Bus and coach security recommended best practice*. (2nd ed). London: Department of Transport.
- Hargadine, E.O. (1995). *Case studies of transit security on bus systems*. Washington, DC: U.S. Department of Transportation, Federal Transit Administration.
- Hart, T.C., & Miethe, T.D. (2014). Street robbery and public bus stops: A case study of activity nodes and situational risk. *Security Journal*, 27(2), 180–193.
- Henderson, C. (1992). New public transportation technology. In G. E. Gray and L. A. Hoel (Eds.), *Public transportation: planning, operations and management*. Englewood Cliffs, N.J.: Prentice-Hall.
- Hess, D. B. (2006). Security on buses and trains: guarding the nation's public transit systems against terrorist attacks. *Journal of Security Education*, 1(4), 119–132.
- Ingalls, G., Hartgen, D.T., & Owens, T.W. (1994). Public fear of crime and its role in bus transit use. *Transportation Research Record*, 1433:201–11.
- Ingram, G. K. (1998). Patterns of metropolitan development: what have we learned? *Urban Studies*, 35, 1019–35.
- Jenkins, B.M. (2010). *Terrorist attacks on public bus transportation: A preliminary empirical analysis*. San Jose, CA: Mineta Transportation Institute, College of Business, San Jose State University.
- Jones, P., Lucas, K., & Whittles, M. (2003). Evaluating and implementing transport measures in a wider policy context: the 'Civilising Cities' initiative. *Transport Policy*, 10(3), 209.
- Kennedy, D.M. (2008). *Personal security in public transport travel in New Zealand: Problems, issues and solutions. Research Report 344*. Wellington, NZ: Land Transport New Zealand.
- Kirchhoff, G. F., Morosawa, H., Barkhuizen, J., Bus-singer, C., Sutseyo, H., & Bey, J.F. (2007). The Asian passengers' safety study of sexual molestation on trains and buses: The Indonesian pilot study. *Acta Criminologica*, 20, 1–13.
- Koo, R.B. (2013). Assessing the correlation between bus stop densities and residential crime typologies. *Crime Prevention and Community Safety*, 15, 81–105.
- Kruger, T., & Landman, K. (2007). *Crime and public transport: designing a safer journey*. In Proceedings of the 26 Southern African Transport Conference (SATC), Pretoria, South Africa. <http://www.repository.up.ac.za/bitstream/handle/2263/5984/070.pdf?sequence=1>.
- Laurence, C. (2007). *Reducing crime through physical modification: evaluating the use of situational crime prevention strategies in a rapid transit environment in British Columbia*. Burnaby, BC, CAN: School of Criminology, Simon Fraser University
- Levine, N., & Wachs, M. (1985). *Factors Affecting the Incidence of Bus Crime in Los Angeles*. Report CA-06-0195. 2 vols. Washington, DC: US Department of Transportation Office of Technical Assistance, Urban Mass Transportation Administration.
- Levine, N., & Wachs, M. (1986a). Bus crime in Los Angeles: measuring the incidence. *Transportation Research A*, 20, 273–84.
- Levine, N., & Wachs, M. (1986b). Bus crime in Los Angeles. II: Victims and public impact. *Transportation Research A*, 20, 285–93.
- Levine, N., Wachs, M., & Shirazi, E. (1986). Crime at bus stops: A study of environmental factors. *Journal of Architectural and Planning Research*, 3, 339–61.
- Loukaitou-Sideris, A. (1999). Hot spots of bus stop crime: The importance of environmental attributes. *Journal of the American Planning Association*, 65 (4), 17.

- Loukaitou-Sideris, A., Liggett, R., Iseki, H., & Thurlow, W. (2001). Measuring the effects of built environment on bus stop crime. *Environment and Planning B: Planning and Design*, 28(2), 255–280.
- Loukaitou-Sideris, A., & Fink, C. (2009). Addressing women's fear of victimisation in transportation settings: A survey of US transit agencies. *Urban Affairs Review*, 44(4): 554
- Markovich, J., & Lucas, K. (2011). *The social and distributional impacts of transport: a literature review. Working paper no. 1055*. Oxford, UK: Transport Studies Unit, School of Geography and the Environment, University of Oxford.
- Moore, S. (2010). Preventing anti-social behavior on public transport: an alternative route? *Crime Prevention and Community Safety*, 12(3), 176–193.
- Natarajan, M. (2010). *Sexual harassment in public places in India: security and urban design*. Paper presented at the at the JJ's 9th Biennial Conference, Morocco.
- Neupane, G., & Chesney-Lind, M. (2014). Violence against women on public transport in Nepal: sexual harassment and the spatial expression of male privilege. *International Journal of Comparative and Applied Criminal Justice*, 38(1), 23–38.
- Newton, A., (2004). *Crime and disorder on buses: Towards an evidence base for effective crime prevention*. Unpublished PhD thesis: Liverpool: University of Liverpool.
- Newton, A. (2005). Crime on public transport: Static and non-static (moving) crime events. *Western Criminology Review*, 5(3), 23–40.
- Newton, A. (2008). A study of bus route crime risk in urban areas: The changing environs of a bus journey, *Built Environment*, 34 (1), 88–103.
- Newton, A., & Bowers, K. (2007). The geography of bus shelter damage: The influence of crime, neighbourhood characteristics and land use. *Internet Journal of Criminology*, 1–20.
- Newton, A., Johnson, S.D., & Bowers, K.J. (2004). Crime on bus routes: An evaluation of a safer-travel initiative. *Policing, an International Journal of Police Strategies and Management*, 27(3), 302–319.
- Paes-Machado, E., & Levenstein, C. (2004). 'I'm sorry everybody, but this is Brazil': Armed robbery on the buses in Brazilian cities. *British Journal of Criminology*, 44(1), 1–14.
- Page, O., Moeketsi, P., Schurink, W., Molefe, L. & Bruce, D. (2001). *Crime and crime prevention on public transport*. Pretoria, South Africa. Unisa Press, University of South Africa.
- Palmer, E.J., Hollin, C. R., & Caulfield, L. S. (2005). Surveying fear: crime, buses and new paint. *Crime Prevention and Community Safety*, 7(4), 47–58.
- Patterson, A. H. (1985). Fear of crime and other barriers to use of public transportation by the elderly. *Journal of Architectural Planning and Research*, 2, 277–88.
- Root, A., Schintler, L., and Button, K. (2000). Woman, travel and the idea of 'sustainable transport'. *Transport Reviews*, 20(3), 369–383.
- Sham, R., Norhayati, O., & Widyawati, A.D. (2012). Managing public transport service operation in reducing travel fear factor. In *AicE-Bs 2012 Cairo (Asia Pacific International Conference on Environment-Behavior Studies)*, Mercure Le Sphinx Cairo Hotel, Giza, Egypt, 31 October–2 November 2012, *Procedia—Social and Behavioral Sciences*.
- Smith, M., & Clarke, R. (2000). Crime and public transport. In M. Tonry (Ed.), *Crime and Justice: A Review of the Research* (Vol. 27). (pp. 169–233). Chicago, IL: Chicago University Press.
- Smith, M., & Cornish, D. (2006): *Secure and tranquil travel: Preventing crime and disorder on public transport*. London: UCL Jill Dando Institute of Crime Science.
- Smith, M., (2008). Addressing the security needs of women passengers on public transport. *Security Journal*, 21, 117–133.
- Stafford, J. (2003). Safer travel by design: reducing crime on public transport. Proceedings of the Institution of Civil Engineers. *Municipal Engineer*, 156(2), 87–88.
- Sturman, A. (1980). Damage on buses: The effects of supervision. In R. V. G. Clarke and P. Mayhew (Ed.), In H. M. London (ED.), *Designing out crime*, Stationery Office for Home Office Research Unit.
- Tirachini, A., Hensher, D. A., & Rose, J. M. (2013). Crowding in public transport systems: Effects on users, operation and implications for the estimation of demand. *Transportation Research Part A*, 53, 36–52.
- Tompson, L., Partridge, H., & Shepherd, N. (2009). Hot routes: developing a new technique for the spatial analysis of crime. *Crime Mapping: a Journal of Research and Practice*, 1(1), 77–96.
- Van Andel, H. (1989). Crime prevention that works: the care of public transport in the Netherlands. *British Journal of Criminology*, 29(1), 47–56.
- Vilalta, C.J. (2011). Fear of crime in public transport: research in Mexico City, *Crime Prevention and Community Safety*, 13(3), 171–186.
- Yu, S. V. (2011). *Bus stops and crime: do bus stops increase crime opportunities*. ElPaso: LFB Scholarly Publishing LLC.

References

- Beebe, J. (2001). *Rapid assessment process: an introduction*. Walnut Creek: AltaMira Press.
- Ceccato, V. (2014). Safety on the move: crime and perceived safety in transit environments. *Security Journal*, 27, 127–131.
- Clarke, R. V. G. (Ed.). (1997). *Situational crime prevention* (pp. 53–70). Monsey: Criminal Justice Press.
- Clarke, R. V. G. (2005). Seven misconceptions of situational crime prevention. In N. Tilley (Ed.), *Handbook of crime prevention and community safety* (pp. 39–70). Cullompton: Willan.
- Clarke, R. V. G. (2010). Crime Science. In E. McLaughlin & T. Newburn (Eds.), *Handbook of criminological theory*. London: Sage.
- Clarke, R. V., & Smith, M. J. (2000). Crime and public transport. In M. Tonry (Ed.), *Crime and justice: a review of research*, Vol. 27, (pp. 169–233).
- Comiskey, C. M., O'Sullivan, K., & Milnes, J. (2012). Regional drug user services in times of scarce financial resources: using a rapid assessment response approach to evaluate, plan, and prioritize essential services. *Substance Use and Misuse*, 47(3), 254–264.
- Decker, S. H., & Pyrooz, D. C. (2010). Gang violence worldwide. In S. H. Decker & D. C. Pyrooz (Eds.), *Small arms survey*. Cambridge: Cambridge University Press.
- Eklom, P. (2012). *Crime prevention, security and community safety using the 5Is framework*. UK: Palgrave Macmillan.
- Escuela Superior de Economía y Negocios (ESEN). (2013). *Encuesta de Victimización en El Salvador 2012*. San Salvador: Centro de Políticas Públicas.
- Felson, M. & Clarke, R.V.G (1998) *Opportunity makes the thief practical theory for crime prevention*. Police Research Series Paper 98, London, UK: Home Office.
- Fitch, C., Stimson, G. V., Rhodes, T., & Poznyak, V. (2004). Rapid assessment: an international review of diffusion, practice and outcomes in the substance use field. *Social Science and Medicine*, 59(9), 1819–1830.
- Hamel, R., & Hamel, P. (2012). Implementing crime prevention: good governance and a science of implementation. In B. Welsh & D. Farrington (Eds.), *The Oxford handbook on crime prevention* (pp. 423–445). Oxford: Oxford University Press.
- Instituto de Medicina Legal (IML). (2013). *Estadísticas sobre Homicidios*. San Salvador: Departamento Académico y de Estadística.
- MacIntyre, K. (1999). Rapid assessment and sample surveys: trade-offs in precision and cost. *Health Policy Plan.*, 14, 363–373.
- Wortley R., & Mazerolle, L. (2008) (eds.). *Environmental criminology and crime analysis*. Cullompton, UK: Willan Publishing.
- McDonald, D. (2005). A rapid situation assessment of drug use in Papua New Guinea. *Drug and Alcohol Review*, 24(1), 79–82.
- Natarajan, M. (2011). *Crime opportunity theories* (Ed). Franham, UK: Ashgate Publishing.
- Newton, A. D. (2014). Crime on public transport. In Encyclopedia of criminology and criminal justice. (pp. 709–720). Springer, London.
- Smith, M. J., & Cornish, D. B. (2006). *Secure and tranquil travel: Preventing crime and disorder on public transport*. Routledge.
- Stimson, G. V., Donoghoe, M. C., Fitch, C., & Rhodes, T. (2001). *Rapid assessment and response technical guide*. Geneva: WHO.
- Tilley, N. (1993). *After Kirkholt: theory, methods and results of replication evaluations* (Crime Prevention Unit Paper 47). London, UK: Home Office. <http://www.homeoffice.gov.uk/rds/prgpdfs/fcpu47.pdf>.
- Trotter, R. T. I. I., Needle, R. H., Goosby, E., Bates, C., & Singer, M. (2001). A methodological model for rapid assessment, response, and evaluation: The RARE program in public health. *Field Methods*, 13(2), 137–159.
- Van Hout, M. C., & Bingham, T. (2013). Open drug scenes and drug-related public nuisance: a visual rapid assessment research study in Dublin, Ireland. *Journal of Ethnicity in Substance Abuse*, 12(2), 154–178.

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