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Public Transit Safety
Among University Students

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Public Transit Safety
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16. Abstract

This study focuses on the sexual harassment experiences of university students during their public transit journeys. We focus on university students because this group is typically more transit dependent than the general public, and possibly because of their age, more vulnerable to victimization from sexual harassment than other adults. Focusing on Los Angeles, we examine the transit safety concerns and sexual harassment experiences of students at three local universities: University of California, Los Angeles (UCLA), California State University, Los Angeles (CSULA), and California State University, Northridge (CSUN). We inquire how these experiences may vary by gender or other individual characteristics; how they affect the student choices about using transit; and what type of precautions and behavioral and travel adaptations students usually take.

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The Pacific Southwest Region UTC conducts an integrated, multidisciplinary program of research, education and technology transfer aimed at improving the mobility of people and goods throughout the region. Our program is organized around four themes: 1) technology to address transportation problems and improve mobility; 2) improving mobility for vulnerable populations; 3) Improving resilience and protecting the environment; and 4) managing mobility in high growth areas.

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Executive Summary

Sexual harassment is a common occurrence in transit environments, and female passengers are the most likely victims. While a robust literature has examined the social and physical parameters of transit crime, we know less about the extent, type, sites, and socio-physical determinants of sexual harassment in transit environments, and even less about effective strategies.

This study focuses on the sexual harassment experiences of university students during their public transit journeys. We focus on university students because this group is typically more transit dependent than the general public, and possibly because of their age, more vulnerable to victimization from sexual harassment than other adults. Focusing on Los Angeles, we examine the transit safety concerns and sexual harassment experiences of students at three local universities: University of California, Los Angeles (UCLA), California State University, Los Angeles (CSULA), and California State University, Northridge (CSUN). We inquire how these experiences may vary by gender or other individual characteristics; how they affect the student choices about using transit; and what type of precautions and behavioral and travel adaptations students usually take.

This study explores these issues drawing from a survey of 1,284 students from the three aforementioned universities. Students with transit passes at these campuses received an online survey link to a questionnaire involving questions about their experiences with harassment on public transit, as well as their general concerns with bus and rail transit, their perceptions of safety, and their travel behavior patterns. Additionally, we conducted interviews with representatives of transit operators in the Los Angeles area to find out what actions they may take to tackle sexual harassment on their systems. Lastly, we reviewed the international literature for strategies and practices against harassment in transit environments.

One motivation behind this study was to identify the possible solutions to the sexual harassment challenges that may affect the college students' use of transit. We, therefore, conclude this study with policy recommendations on how to mitigate sexual harassment in transit environments.

Major findings

Sexual harassment in transit environments is very common.

Indeed, 72% of respondents using the bus system and 48% of respondents using the rail system reported having experienced at least one sexual harassment behavior at a transit setting over the last three years.

Sexual harassment affects primarily female students, but some male students are also affected.

Significantly higher percentages of female than male students reported experiencing sexual harassment. A small number of transgender students completed the survey, but the small sample size (n=5) limited meaningful analysis.

Sexual orientation may affect harassment incidence but results are mixed.

LGBTQI students run a statistically significant higher chance of being sexually victimized than straight students, but only on the subway; more robust samples are necessary for further analysis of this relationship.

Frequency of transit use affects victimization.

Bus or train riders using transit three or more days per week were more likely victims of sexual harassment.

Different types of sexual harassment take place at different transit settings.

Verbal harassment was much more common than non-verbal (e.g. stalking, indecent exposure) or physical harassment. Additionally, higher percentages of students reported experiencing sexual harassment while using the bus system than while using the train system. Additionally, different types of transit settings seemed to attract more prominently certain types of harassment behaviors. For example, women were more likely to experience obscene language at the transit stop or on the way to the stop, and more likely to experience inappropriate touching while onboard the transit vehicle.

Some characteristics of the physical and social environment influence harassment incidence.

Regression models showed that certain characteristics of the physical environment enhance or decrease the possibilities of harassment and student perceptions of safety at transit settings. For example, desolate bus stops increased the fear of students, while the lack of adequate lighting at transit settings was linked to more harassment incidents. The regression models also showed that certain characteristics of the social environment, such as the presence of drunk individuals and drug use/drug sales at transit stops, may increase the incidence of sexual harassment.

Sexual harassment creates fear among female riders and reduces transit use.

While 45% of male students "always" felt safe waiting for or riding the bus during the day, only about 26% of female students felt "always" safe; and while a bit over 40% of male subway riders "always" felt safe riding or waiting for the train during daytime, slightly more than 20% of female riders indicated the same. Eight percent of men and ten percent of women said that they do not use the bus after dark.

Fear leads female students to take precautions, including not using transit.

The survey showed that 65% of female students felt the need to take some precautions during their transit trips, compared to only 30% of male students who did the same. Fear leads those students who have other options to avoid transit, while some students who are captive riders feel the need to avoid traveling at night or take a series of other precautions.

Sexual harassment is largely underreported.

Only 10% of all the students who experienced or observed crimes of sexual harassment on transit reported the incident. These students reported mostly to friends or family rather than to the police or transit operators.

The Los Angeles student experience is a global experience.

Comparing the findings from this study to findings of a global study involving 17 other cities, showed that sexual harassment on transit is a global experience, even though the extent of harassment varies among different cities.

There is a general lack of awareness from the part of transit agencies regarding the extent of sexual harassment on public transit.

Only a few agencies include questions about sexual harassment in their passenger surveys; and those who do, focus only on the onboard passenger experience. Additionally, because reporting of harassment is so limited, many agencies do not have a clear picture of the problem.

Policy Recommendations

Collect data about sexual harassment on transit.

Transit operators should conduct annual passenger surveys and include questions about harassment throughout the transit journey. Police crime coding should also separate and report the incidence of different sexual harassment offenses. Research should seek to understand how harassment may affect differently different subgroups of transit riders, and how characteristics such as age, race/ethnicity, sexual orientation, disability may interact with gender to increase the risk of harassment.

Give attention to the physical environment.

Respondents made clear that poorly maintained and dark transit environments made them fearful, a finding that points to the value of keeping transit settings well-lit and well-maintained. Additionally, the placement of bus stops in locations that allow good visibility from surrounding establishments is important.

Increase the reliability of bus service.

Knowing when the next transit vehicle will arrive helps scheduling the transit trip in ways that can minimize long waiting and exposure at bus stops and station platforms.

Allow on-demand stops at night.

Allowing passengers after dark to disembark from the transit vehicle at locations that are closer to their destinations than the transit stop, minimizes long walks and possible exposure to sexual harassment.

Make it easy to report harassment.

Smart phone apps and dedicated phone lines with options to text concerns directly to authorities/agencies can help victims and bystanders report harassment and other crimes in real time.

Educate the public about harassment.

Transit agencies, municipal departments, police, and other responsible public agencies can create widespread educational campaigns to raise awareness about the problem, provide simple bystander training, and encourage victims to report sexual harassment incidents.

Safe-guard against anti-social behaviors.

Many respondents indicated that they would use transit more if they did not fear antisocial behaviors like drunkenness and obscene language. Employing more security patrols (ideally in the form of community policing) and security cameras in locations with high degrees of anti-social behavior can be helpful.

Add more high-capacity vehicles during rush time.

The addition of more transit vehicles helps reduce overcrowding and opportunities for inappropriate touching.

Learn from industry best practices.

Transit operators can learn a great deal from the practices of transit operators in different parts of the world that have prioritized efforts to reduce sexual crimes, including anti-harassment campaigns, training of transit vehicle operators, on-demand stops, and use of digital technologies to report harassment events.

Modification of the penal code.

Penal codes should designate the full cadre of sexual harassment behaviors as criminal offenses and define appropriate penalties for each offense.

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Introduction:
Scope and Purpose of the Study

Sexual harassment in public environments is a pervasive issue in the United States and around the world. Too often, this type of harassment takes place when people, women, in particular, are subjected to overt objectification, cat-calling, or worse in public spaces. This all-too-common experience is well-known but understudied, especially as it occurs in public transportation environments. In response, this report presents the findings from a survey exploring the experiences of transit-riding university students from three Los Angeles-area campuses with sexual harassment and assault in transit environments. This work inquires how the students' concerns and experiences affect their choices about using transit, how these may differ by gender, and what can be done about it.

The terms "sexual harassment" and "sexual assault" are used in this study to distinguish two types of sex crimes that differ in their degree of seriousness. Sexual harassment, broadly defined, is "any unwanted attention including lewd comments, leering, sexual invitations, threats, displaying pornographic material, being followed or pictured, and public masturbation," while sexual assault refers to situations "when someone is threatened, coerced, or forced into non-consensual sexual acts"(Gekoski et al., 2017). Scholars identify three categories of sexual harassment crimes in public spaces and transit environments: 1) verbal; 2) non-verbal; and 3) physical (Ceccato and Loukaitou-Sideris, forthcoming 2020).

Why is it important to study sexual harassment in public environments? We suspect that the fear and risk of being exposed to harassment may prevent some riders from using transit. Despite significant investment in transit infrastructure in California over the last 15 years, transit ridership has been mostly declining since 2007 (Manville et al., 2018). This decline contributes to increased traffic congestion during a time that many California streets and highways are among the most congested in the nation (Richards, 2019) and leads to higher greenhouse gas emissions. Studies show that a variety of factors influence transit use, such as service quality, fare costs, and perceived transit safety.

Scholars have argued that the perception of personal safety can have a significant influence on travel patterns (Lynch and Atkins, 1988; Loukaitou-Sideris, 2009), and concern over safety is a common reason why many choose not to use transit (Hartgen et al., 1993). For transit riders without access to private automobiles, fear for their safety may affect their travel behavior and restrict their mobility. Safety concerns lead people to take precautionary measures that range from the adoption of certain behavioral mechanisms when in public, to choosing specific routes, travel modes and transit environments over others, or completely avoiding particular settings and activities such as walking or bicycling (Loukaitou-Sideris, 2014).

Researchers typically find that women riders are more fearful than men about victimization while traveling (Loukaitou-Sideris, 2012). A particular concern of women transit riders are offenses of a sexual nature that happen around the world on buses, at bus stops and on trains, as well as on the way to/from the transit stop (Best, 2013; Romero, 2013).

Some studies indicate that sexual harassment in transit environments often goes unreported, and thus remains largely invisible to transit operators (see Chapter 2). A Washington Post article titled "Why the #MeToo movement is a public transportation issue," argued that instances of sexual harassment commonly happen on public transportation, and stated:

> *"For many, it's a depressing but foregone conclusion: If you're a woman who rides public transportation, you're almost guaranteed to experience the kinds of demeaning or threatening encounters that fit squarely within the bounds of the #MeToo conversation" (Powers, 2017).*

Surveys of transit operators in the U.S. have found that operators are gender-neutral in their policies, leading to a significant mismatch between the security needs of female riders and the adopted strategies. A 2006 survey of 131 large transit operators in the U.S. found that they did not perceive a particular need for women-focused safety programs (Loukaitou-Sideris and Fink, 2009). But this approach to passenger safety creates a "gender gap" in mobility and causes transportation inequity, since women are typically more reluctant to walk, bike, or use public transit out of varying safety concerns (Loukaitou-Sideris, 2016). These concerns, which lead to the avoidance of ways of travel, counteract many cities' desire to promote greener travel modes and the transit agencies' aspirations for increased transit ridership.

The studies mentioned above focus on the general public, and it is not clear if similar patterns hold among college students, a group with high transit use. College students typically have lower incomes and car ownership rates than the general public and, thus, represent a group of commuters who are less likely to travel alone by private car. Some students are captive transit riders, while others are choice riders if they have access to a private automobile. Universities often encourage transit ridership for students, offering them free or very low-cost transit passes. Indeed, university subsidies for bus fares are considered as the most effective ways of managing transportation demand in college campuses (Rotaris and Danielis, 2015).

This study examines the transit safety concerns of university students at University of California, Los Angeles (UCLA), California State University, Los Angeles (CSULA), and California State University, Northridge (CSUN); how these may vary by gender or other individual characteristics; how they affect the student choices about using transit; and what type of precautions and behavioral and travel adaptations students have to follow. The motivations behind this study are to identify the challenges that may affect transit use by college students, but also propose policy responses to overcome them. While the study examines a variety of safety concerns affecting both male and female students, it is particularly interested in identifying issues of sexual assault and sexual harassment in transit environments that are besetting female transit riders.

This report explores these transit concerns drawing from a survey of students which was administered at the three aforementioned universities. A randomly selected group of 1,284 students completed an online survey involving questions

about their experiences with harassment on public transit, as well as their general concerns with bus and rail transit, their perceptions of safety, and their travel behavior patterns.

Following this introductory chapter, Chapter 2 summarizes the literature that traces the extent and impact of sexual harassment in transit environments. Chapter 3 describes the study methods, and Chapter 4 discusses the survey findings, while Chapter 5 discusses findings from interviews with local transit operators on the topic of sexual harassment on transit. Chapter 6 presents some anti-harassment strategies in transit environments in cities outside of the Los Angeles region. Chapter 7 concludes with a summary of findings, policy recommendations, and recommendations for future research.

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2

**Sexual Harassment and Assault
in Transit Environments:
A Review of the English-language Literature**

In the last couple of years, the #MeToo movement has brought much-needed attention to crimes of sexual harassment. While most of this attention has concentrated on the workplace, the entertainment industry, and colleges and universities, sexual harassment in public spaces is given less attention. A particular type of public space that hosts fleeting interactions among large numbers of people are transit environments. Indeed, buses, bus stops, trains, and train stations represent a unique category of public space, as they are populated by thousands of anonymous riders on the move. Because of their anonymity and relative openness, transit environments are often difficult to control (Smith and Clarke, 2000) and may attract different types of crime, making them both crime generators and crime attractors (Irvin-Erickson and La Vigne, 2015). At the same time, transit environments are spatially confined behavior settings populated by transit riders with rather predictable behavior.

Scholars from criminology and urban planning have developed a robust literature on transit crime, examining the attributes of settings that seem to attract it as well as its impact on the transit riders' behavior. From this literature, we know that transit environments attract two main types of crime: 1) against the transit system, such as vandalism, graffiti, and fare evasion[1]; and 2) against persons (transit employees or transit passengers). The latter includes both serious felony crimes such as assault, robbery, rape, theft, as well as so-called "antisocial behaviors" such as obscene language, drunkenness, drug selling, and sexual harassment. The literature also indicates that different types of crime occur under different environmental conditions. For example, pickpocketing, jewelry snatching, or groping are

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1 Fare evasion is considered a misdemeanor crime in California upon a third or subsequent violation.

Table 2.1
Types of Sexual Harassment

Verbal	Non-Verbal	Physical
» Making sexual comments (about someone's clothing, looks, body, etc.) » Whistling, making kissing sounds, calling one 'babe,' 'honey,' or 'sweetheart' » Asking to have sex with a stranger » Unwanted sexual teasing, remarks » Asking personal questions about sex life » Using obscene, abusive language	» Unwanted sexual looks or gestures » Masturbating in public » Showing pornographic images » Indecent exposure » Stalking	» Groping (touching inappropriately) » Unwanted kissing to a stranger » Pulling or playing with one's hair, jewelry, or clothing » Sexual assault » Rape

facilitated by overcrowding in transit environments, while robbery, assault, or rape tend to happen in settings that lack natural surveillance and supervision, such as desolate bus stops (Loukaitou-Sideris, 1999).

The terms "sexual harassment" and "sexual assault" are used to distinguish two types of sex offenses that differ in their degree of seriousness. Sexual harassment, broadly defined, is "improper behavior that has a sexual dimension" (O'Donohue et al., 1998, 112), or as further elaborated: "any unwanted attention including lewd comments, leering, sexual invitations, threats, displaying pornographic material, being followed or pictured, and public masturbation" (Gekoski et al., 2017, 4). Sexual assault refers to situations "when someone is threatened, coerced, or forced into non-consensual sexual acts" (Allen and Vanderschuren, 2016). Ceccato and Loukaitou-Sideris (forthcoming 2020) identify three categories of sexual harassment in public spaces and transit environments: 1) verbal; 2) non-verbal; and 3) physical, as shown in Table 2.1.

Feminist writers describe such behaviors as "little rapes," but despite its omnipresence in public settings, sexual harassment is difficult to prove and is persecuted very infrequently (Kuruvilla and Suhara, 2014). Typically, criminal justice systems adopt very narrow definitions of punishable sexual harassment behaviors. For example, section 243.4 of the California Penal Code focuses only on contact behaviors stipulating that "any person who touches an intimate part of another person, if the touching is against the will of the person touched, and is for the specific purpose of sexual arousal, sexual gratification, or sexual abuse, is guilty of misdemeanor sexual battery, punishable by a fine not exceeding $2,000, or by imprisonment not exceeding six months, or by both." The penal code considers rape as a felony, punishable with up to eight years in prison, or more if it causes great bodily injury to the victim (California Penal Code 243.4).

Sexual crimes in transit environments have received relatively little attention compared to other types of transit crimes, even though such crimes are almost as old as public transit. Indeed, as early as 1905, the New York Times referred to sexual harassment and fondling of women riders on the subway as "the Subway problem" (in Hood, 1996), while in 1912, an article in Outlook Magazine talked about the experiences of female riders on New York's Interborough Rapid Transit, arguing that for them "crowding at best is almost intolerable, and at its worst is deliberately insulting... Males are often not chivalrous, and sometimes coarse-grained, vulgar, or licentious" (Outlook Magazine, 1912).

Scholarly research on sexual harassment on public transit only emerged in the 1980s (Beller et al., 1980; Lynch and Atkins, 1988). Before that time, studies on public transport were "gender blind," while studies on sexual harassment focused on workplace and universities as locations rather than on public spaces such as streets or transit environments (Lenton et al., 1999; Vera-Grey, 2016; Gekoski et al., 2017). More recently, however, an increasing number of studies and reports have started focusing on crimes of sexual nature against women in transit (Smith and Clarke, 2000; Morgan and Smith, 2006; Loukaitou-Sideris, 2009; Newton, 2014; Loukaitou-Sideris, 2015; Ceccato, 2017, Ceccato and Paz, 2017; Lea et al., 2017; Goldsmith, 2018).

This literature review aims to collect and systematize scholarly knowledge on the topic with the aim of responding to the following questions:

1. What is the extent and characteristics of harassment in transit environments; how do temporal, spatial, and social factors influence harassment patterns?
2. Is there underreporting of harassment in transit environments?
3. What are the impacts of sexual harassment in transit environments?
4. What strategies and interventions can help reduce sexual harassment in transit environments?

Literature Review Methodology

To respond to these key questions, we first conducted a comprehensive search for academic publications using a variety of databases, including Science Direct, TRID, ProQuest, Google Scholar, Legal Source, NexisUni, and HeinOnline. We

Table 2.2
Databases and Search Terms

Databases	Search Terms	Results
Google Scholar	Sexual harassment on transit	21,800
ProQuest Dissertation	Sex crime on public transit	24,960
ProQuest Dissertation	Sexual assault on public transit	14,580
TRID	Crime on transit	451
TRID	Crime on transit in U.S.	59
Science Direct	Sexual assault on public transit	411
Science Direct	Sex crime on public transit	744
Science Direct	Street harassment	2,107
Science Direct	Sexual harassment, public spaces	1,934
Science Direct	Assault in public spaces	11
Science Direct	Cat calling, public spaces	1,652
Science Direct	Girl watching, public spaces	5,871
Legal Source	Sexual harass* AND public trans*	2
NexisUni	(sex!/2 harass!) AND public transit	99
HeinOnline	Title: "women" AND text: "public trans*"	19
Note: The search wildcards ("*", "!", "!/2") are used to yield results in combination with the terms "transport," "transit," "transportation," "sexual harassment," and "sexually harassed."		

also searched the professional ("grey") literature and reviewed reports deemed as relevant for our topic. We used various combinations of keywords (see Table 2.2) such as sexual harassment, public transport, public space, and sex crime. We also adopted inclusive definitions of sexual harassment that encompass not only harassment but also more serious offenses of assault and rape, and of public transit environment that encompass transit vehicles as well as transit stops and stations to capture both the onboard and waiting experiences.

From the articles and reports compiled, we excluded those that did not take place in a transit setting. We only reviewed English-language publications and limited the chronological frame of the search to publications from the 1980s onward when the first references about harassment on transit appeared in the literature. Initially, we limited the geographic scope of our search to North America, Europe, and Australia, given our focus on the U.S. context and the similar socio-political and cultural contexts shared by these regions. We should note that there is a proliferation of literature on sexual harassment on transit in some cities of the Global South[2], notably in India (Kuruvilla and Suhara, 2014; Natarajan, 2016; Madan and Nalla, 2016; Lea at al., 2017) and its neighboring countries, such as Bangladesh (Nahar et al., 2013; Islam and Amin, 2016), Nepal (Neupane and Chesney-Lind, 2014), and Iran (Lahsaeizadeh and Yousefinejad, 2012), after the brutal gang rape and subsequent death of a young woman on a bus in Delhi. Some of the documented impacts of sexual harassment on victims in these countries—curtailed education, early marriage, hindered development, and even suicide (Islam and Amin, 2016) —are different and more severe from those in the Global North. These differences explain our decision to confine our analysis to the Global North. However, there are strategies and interventions from the Global South which may be helpful for the Global North. Therefore, we expanded our search to include articles from the Global South that focused on responses to harassment.

Once we identified articles as possible candidates for inclusion, we reviewed their abstracts and eliminated those that did not take place in transit settings. We carried out a close examination of the remaining articles to identify which works addressed one or more of our research questions. During the process of closer examination, and once we identified particularly informative articles, we also examined their references for relevant articles we might have missed. In the end, we compiled information from a total of 71 academic and professional publications to prepare this literature review. Figure 2.1 tracks how we reached this number.

Findings

Extent and characteristics of sexual harassment in transit environments

Despite increasing awareness about sexual harassment and assault in public transportation, the extent of such offenses lacks the evidence of large-scale, systematic data (Allen and Vanderschuren, 2016). This absence may be attributed to both underreporting from the part of the victims and the fact that current official

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2 Global South refers to low and middle income countries in Asia, Africa, Latin America and the Caribbean which contrast to the high income countries of the Global North.

Figure 2.1
Flow chart of the systematic literature search

Identifyiing & Screening	Google Scholar: 21,800 / ProQuest Dissertation: 39,540 / TRID: 510 / Science Direct: 12,874 / Legal Source: 2 / Nexis Unit: 99 / HeinOnline: 19

⬇ ———— Selection based on title and abstract

Total
N = unique articles (no duplicates) = 90

⬇ ———— Exclusion based on full text: 19

N = 71

Eligibility

⬇ ———— Exclusion based on relevance: 17

N = 54

⬇ ———— Articles included from hand search (forward & backward snowballing): 5

N = 59

Inclusion

⬇ ———— Articles included from reviewer suggestions and snowballing: 12

Included articles
N = 71

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classifications and recording of crime statistics do not typically reflect specific statistics on sexual harassment (Gardner et al., 2017; Gekoski et al., 2017).

There exist only a few relatively large-scale studies about the extent of sexual harassment in transit environments in North America and Europe. An online survey of New York City subway riders conducted in 2007 that received 1,790 responses (63% female and 32% male) found that 63% of respondents reported having been sexually harassed and 10% having been sexually assaulted on the subway. From those surveyed, 44% reported having witnessed an incident of sexual harassment, while 9% had witnessed an incident of sexual assault. Of these witnesses, the vast majority reported that the victim was female and the perpetrator was male (Stringer, 2007). A more recent but smaller-scale survey of 140 female college students in New York City found that almost 4 out of 5 (77%) had experienced or witnessed sexual harassment in transit environments (Natarajan et al., 2017).

Other studies conducted in different US regions have found smaller percentages of victimization. A 2018 onboard passenger survey conducted by the Los Angeles County Metropolitan Transportation Authority (not reporting the number of passengers surveyed) found that 26% of women riders had experienced sexual harassment during their transit rides over the six prior months; interestingly, 21% of men riders also reported having experienced harassment on transit (Los Angeles Metro, 2018). Similarly, an online survey conducted by the Washington Metropolitan Area Transit Authority (WMATA) in 2018, that received 1,000 responses found that 21% of respondents had experienced sexual harassment on public transportation, and that women (27%) were nearly twice as likely as men (14%) to be the victims (WMATA, 2018).

Similarly, a 2012 study surveyed 523 women in London about their experiences of sexual harassment on public transport, and found that 19% had been harassed; women aged 18-24 (31%) were more likely to be victimized than women aged 25-34 (24%) (EVAW, 2012, cited in Gekoski et al., 2015). Another study by Transport for London in 2012-2013 that conducted 1,000 telephone interviews with Londoners aged 16 and older found that 12 to 15 percent of women reported experiences of sexual harassment in transit environments and that the most commonly victimized age group was 16-24 (Twyford, 2013). Table 2.3 summarizes these studies.

The review of the literature shows that sexual harassment on transit is rather common, even though the reported percentages of victimization vary. We deem that this is because different studies use different definitions of sexual harassment, some inquiring about lifetime victimization experiences, while others about experiences only over a set period. It is also likely that the context (bus or train, bus stop or train station) matters, and some studies focus on only one type of transit environment, while other studies examine the broader transit system. Since many harassment behaviors are encouraged by overcrowding, another pertinent explanation of the differences in the sexual harassment rates may relate to the different levels of crowding experienced by transit systems. As Table 2.4 shows, with much higher transit ridership, New York City buses and trains (which were found to have more harassment incidents than those in Los Angeles and Washington DC)

Table 2.3
Prominence of sexual harassment on transit

Author/ date	Location	Transit setting	Method	Sample size	Findings
String (2007)	New York	New York subway	Online survey	1,790 men and women metro riders	63% had been harassed; 10% had been assaulted on the subway; 93% of the people harassed were female
Natarajan et al. (2017)	New York City	NYC transit environments	Self-administered survey	140 female college students	77% had experienced or witnessed sexual harassment on transit
Los Angeles Metro (2018)	Los Angeles County	LA Metro buses and rail	Onboard passenger survey	Sample size not reported; both men and women surveyed	26% of women and 21% of men had experienced harassment during rides over the past 6 months
Washington Metro Area Transit Authority (2018)	Washington DC	Washington DC transit system	Online survey	1,000 men and women respondents	21% of respondents had experienced sexual harassment on transit; women twice as likely than men to be victims
EVAW (2012)	London	London transit system	Survey	523 women	19% of respondents had been harassed on transit
Twyford (2013)	London	Transport for London riders	Telephone interviews	1,000 men and women over 16	15% of women had experienced sexual harassment in transit environments

have also significantly higher levels of crowdedness than the systems in the other two cities. Admittedly, the numbers in the Table 2.4 represent very crude indications of crowdedness. For this reason, the table includes each transit agency's reported maximum load factors, which represents the maximum allowable number of total people on a transit vehicle divided by the number of its seats.

Influence of socio-demographic factors

Despite the variations in the extent of sexual harassment in transit environments, all studies find that women are disproportionately more victimized than men. According to a report by the Department for Transport in the UK, the risk of experiencing sexual harassment for women is four times higher than men, while the risk of experiencing violent physical assault (being robbed or mugged) is three times lower for women than for men (Crime Concern, 2004).

While it is essential to recognize the gender differences in sexual harassment and assault in transit environments, it is also important to note more nuanced categories rather than solely gender. But only a handful of scholars have examined issues of "intersectionality," namely the nuances among female transit users, and very few have begun to look at gender categories beyond the binary men/women

Table 2.4
Comparative transit data: New York MTA, WMATA, LA METRO

	New York MTA	**Washington DC WMATA**	**Los Angeles Metro**
Annual subway ridership	1,727,366,607	179	27,512,926
Number of train wagons	6435	1126	456
Subway crowding [annual subway ridership/# of wagons]	268,433 people per train wagon	159,585 people per train wagon	60,335 people per train wagon
Maximum load factor - Heavy Rail	2.7 (peak[3]) 1.25 (off-peak)	1.875[4]	Heavy rail: 2.3 (peak) 1.6 (off-peak) Light rail: 1.75 (peak) 12.5 (off-peak)
Annual bus ridership	764,000,000	123,675,724	284,708,290
Number of buses	5,710	1,595	2,308
Bus crowding [annual bus ridership/ number of buses]	133,800 people per bus	77,540 people per bus	123,357 people per bus
Maximum load factor (expressed as passengers per seat) - 40' Bus	1.5 (peak) 1.4 (off-peak)	1.2 (peak) 1.0 (off-peak)	1.3 (peak) 1.25 (off-peak)

classification. Existing intersectional studies largely examine differences in fear and perceived safety of transit environments among different women's groups because of age (Levine and Wachs, 1986; Loukaitou-Sideris, 2005), race (Davis, 1993; Loukaitou-Sideris, 2005), or income (Levine and Wachs, 1986; Loukaitou-Sideris, 2005). Very few studies examine differences in sexual harassment rates, because of different socio-demographic characteristics. Nevertheless, reviewing evidence from Europe, Gekoski et al. (2017) found that younger women are more likely to be harassed than older women.

Drawing from interviews with transgender and gender-nonconforming persons in Portland, Oregon, Lubitow et al., (2017) found that these gender minorities experience frequent harassment on transit systems, which undermines their access to safe public transportation. A recent onboard passenger survey conducted by Los Angeles Metro found that 40% of riders, who had identified their gender as "non-binary," had experienced sexual harassment on transit over the last six months, while only 26% of riders identifying as female, and 21% of riders identifying as male reported experiencing sexual harassment (Los Angeles Metro, 2018). Disability may also be a pertinent factor for sexual victimization. Reviewing a limited literature, Iudici et al. (2017) concluded that the rate of physical and sexual aggression experienced by women with disabilities is double that of women without disabilities.

Influence of environmental and temporal factors

Empirical studies have found that temporal characteristics of the setting can affect a sexual offenders' modus operandi, but place characteristics appear to have a more significant effect (Hewitt and Beauregard, 2014). As mentioned above, one of the key spatial characteristics of transit environments is that they are simultaneously open and accessible to a large number of people and yet spatially confined or even enclosed. This being said, transit environments are not homogenous either, as they include a variety of settings in and around railway stations and bus stops as well as transit vehicles (Pearlstein and Wachs, 1982; Newton, 2014).

The few studies that have explored the spatial patterns of sexual harassment in transit environments find that the problem is pervasive at stops and stations, as well as onboard vehicles. For example, a study led by WMATA in 2018, as referenced above, found that 64% of transit riders who were sexually harassed experienced harassment onboard trains, 58% at rail stations, 40% onboard buses, and 39% at bus stops (WMATA, 2018). Another study of women's everyday mobility in Austria found that 39% of sexual harassment offenses took place in transit settings, of which 71% were inside the vehicles as compared to 29% at transit stops (Stark and Meschik, 2018). Another study that examined sexual harassment in transit environments among college students in 18 different global cities found that it was more prevalent in one particular transit mode than in another, but this ranged from city to city. For example, students in Stockholm, Paris, and Tokyo indicated that more harassment incidents occurred on the train than on the bus, while the opposite was true in São Paulo and Los Angeles (Ceccato and Loukaitou-Sideris, forthcoming 2020). Thus, which types of transit environments are more likely to facilitate sexual harassment is context-specific and may relate to the level of crowding as well as the design and policing characteristics of different transit systems.

Several scholars have also advocated for a more expansive view of the transit environment called "the whole journey approach," encompassing "first mile/last mile" components. They argue that walking to and from the bus stops and/or subway stations is an important aspect of the transit journey and that harassment during this segment of the transit journey is also likely to affect the behavior of transit riders (Smith 2008; Natarajan et al. 2017). Adopting this approach, the study of female college students in New York City referenced above found that patterns of victimization were extensive during all stages of their subway commute to and from college: 46% experienced harassment while walking, 49% at stations, and 61% on board transit vehicles (Natarajan et al., 2017).

When it comes to the microenvironment of transit settings, the literature on transit crime has found that certain environmental characteristics help increase crime, while others help reduce it. As suggested by the weight of the empirical evidence, positive environmental characteristics include good lighting, good visibility, maintenance/cleanliness, surveillance through closed-circuit television cameras (CCTV), and presence of people. On the other hand, negative environmental characteristics include isolation/desolation, poor lighting/darkness, poor visibility, confined and enclosed spaces, and poor maintenance indicated by the presence of litter, graffiti, and vandalism (La Vigne, 1996; Cozens et al., 2003; European Conference of Ministers of Transport, 2003; Crime Concern, 2004; Ceccato, 2014; Loukaitou-Sideris, 2012; 2015).

While a significant body of literature examines the relationship between environmental characteristics and transit crime in general, we only found three studies that have examined the relationship between the attributes of the physical and social environment of transit settings and sexual crimes (Table 2.5). In a study that focused only on rape incidents and examined the spatial characteristics of 76 places in Stockholm where outdoor rape had happened, Ceccato (2014) found that 76% of these places were less than 500 meters (1,640 feet) from a bus stop, and 53% were close to a train station. Environmental attributes that had statistically significant relationships with these settings were poor visibility, seclusion, the potential for an easy escape of the perpetrator, presence of tunnels linking to the transit setting, and proximity of alcohol-selling establishments. Examining sexual violence against women in São Paulo's metro stations, Ceccato and Paz (2017) found statistically significant relationships between sex crime occurrence and stations that had dark corners, proximity to bicycle storage, commercial uses and restaurants, and physical (graffiti, litter) and social disorder (drunk people). Lastly, a comparative study that examined the influence of environmental variables on the sexual harassment of college students in Bogota, Los Angeles, Manila, and Stockholm, found that certain elements of both the physical environment (poor illumination, litter), as well as the social environment (presence of drunk people and panhandling), were significantly associated with sexual harassment (Ceccato et al., forthcoming).

Studies that have examined the temporal patterns of harassment find that sexual harassment in transit environments tends to concentrate during peak hours of traffic, when there is overcrowding (Morgan and Smith, 2006). For example, the

Author/date	Location	Transit setting	Methods	Factors affecting crime + positive factors (crime reducing) - negative factors (crime enhancing)
Ceccato (2014)	Stockholm	76 rape places in Stockholm	GIS, police records, observation of sample of rape places	Poor visibility (-) Easy escapes (-) Secluded spaces (-) Tunnels linking to transit settings (-) Alcohol-selling establishments (-) End subway station (-)
Ceccato and Paz (2017)	São Paulo, Brazil	metro stations	GIS, Google street view, regression models	Presence of dark corners (-) Physical & social disorder (-) Proximity to bicycle storage (-) Commercial uses, restaurant (-)
Ceccato et al. (forthcoming)	Bogota, Los Angeles, Manila, Stockholm	Bus stops and railway stations	Regression models	Poor illumination (-) Poorly guarded settings (-) Dirty environment (-) Presence of drunk people (-) Panhandling (-)

2007 study of New York City subway riders found that 69% of those harassed had experienced the incident during rush hours (Stringer, 2007). However, rape and sexual assault often take place in desolate, empty settings, which typically exist in the late night or early morning hours (Koskella and Pain, 2000; Ceccato, 2014).

Underreporting

The lack of large-scale evidence on the prevalence of sexual harassment and assault in the transit environment is partly due to underreporting. An aforementioned study of the incidence of harassment among college students in 18 global cities found that, except for Guangzhou in China, more than half of the victims of sexual harassment in all other cities chose not to report the incident. In four cities—Rio Claro in Brazil, Los Angeles, Mexico City and Stockholm—the percent of students reporting harassment fell below 10% (Ceccato et al., forthcoming). This substantial level of underreporting explains the discrepancy between reported crime statistics and empirical results from surveys that typically find much higher levels of victimization.

Sexual harassment is more seriously underreported compared to most other crimes. In an earlier study on sex crimes in the New York City subway system, Beller et al. (1980) pointed out that all crimes are seriously underreported both locally and nationally, perhaps except for murder and theft of insured items, but sex crimes on a local subway system are probably underreported to a greater extent than other crimes. According to the 2008 report by the British Transport Police Authority, while levels of underreporting are relatively higher for all crimes on the transport

network as compared to other settings, underreporting by women of threatening behavior or actual assault may be as high as 90% (British Transport Police Authority, 2008). Other scholars also point out that rape and sexual assault are the most underreported of all serious crimes. These are the crimes that the FBI characterizes as Part I, and include criminal homicide, robbery, aggravated assault, larceny theft, burglary, grand theft auto/motor vehicle theft, arson, and rape. (Koskela and Pain, 2000; Loukaitou-Sideris, 2005).

Empirical data from transit-rider surveys have confirmed that very high percentages of sexual harassment and assault offenses are not reported and, therefore, remain largely invisible in crime statistics. A 2014 passenger survey by the Los Angeles County Metropolitan Transportation Authority found that 22% of the passengers, the majority of which were female passengers, experienced sexual harassment during rides; yet only 99 official reports were received in the whole year (Khanna, 2018). The aforementioned 2007 survey on the New York City subway system found that only 4% of respondents who were sexually harassed and 4% of bystanders who had witnessed a harassment incident reported it to the police and/or transit agency (Stringer, 2007). The reporting rates for sexual assault, which is more serious and violent, were somewhat higher, but still very low: 14% of the victims of sexual assault and 9% of the witnesses reported to the police and/or transit agency (Stringer, 2007).

Researchers find several reasons for underreporting. One is that the experience of sexual harassment and assault may be sullying or traumatizing, and therefore the victim may choose not to relive it by filing a police report or being summoned to the courts. Another reason is the distrust of the police. Surveying 95 women transit riders at downtown Los Angeles bus stops, Loukaitou-Sideris (2005) found that most of them tended not to report sexual offenses against them because they did not believe that the police would act upon their report. The extent of underreporting was higher among recent immigrants, who were even less likely to report to the police out of fear because of the undocumented residency status of them or their relatives.

The embarrassment felt by victims of sexual harassment due to social and cultural pressure may also result in underreporting. In a public culture that often blames the victim, women are more likely to be embarrassed and reluctant to report to the police (Loukaitou-Sideris, 2005), as they can be blamed for provoking the perpetrator, or for being out in public after dark or at "a place they shouldn't be" (Loukaitou-Sideris, 2015). Such social control and pressure may make women unwilling to file a police report (Beller et al., 1980). The police may also be affected by such cultural bias, and female victims may not file a police report because of the "patronizing paternalism of police advice" (Radford and Laffy, 1984, 115). However, the seriousness of this issue and the extent of underreporting may be different from one socio-cultural or geographic context to the other, and may also be changing as a result of the #MeToo movement. Thus, a 2017 study of bystander perceptions to sexual harassment in transit environments in the UK found that participants attributed blame to the perpetrator rather than the victim, and the likelihood of reporting from the bystander was influenced by passenger density

and the perceived severity of the incident. Bystanders were more likely to report when passenger density was low than high, but the likelihood of reporting was not affected by density, if the offense was serious (Ball and Wesson, 2017).

Impacts of sexual harassment

The review of the literature shows that sexual harassment in transit environments has impacts on transit riders and on the ridership of transit systems. Impacts on transit riders include anxiety and fear, avoidance, and risk management behaviors, while the impact on transit systems is loss of revenue.

Anxiety and Fear

In general, studies find that women exhibit higher levels of anxiety over personal safety and feel more unsafe in public transportation environments than men, and such feelings have impacts on their travel behavior and mobility (Keane, 1998; Cozens et al., 2003; Crime Concern, 2004; Loukaitou-Sideris, 2005; 2009; 2015; Abenoza et al., 2018; Stark and Meschik, 2018). Sexual harassment and assault are more visible to women than men as compared to other types of transit crimes (Loukaitou-Sideris, 2005). Experiences of being a victim or simply witnessing sexual harassment can generate fear of transit environments (Koskela and Pain, 2000). Indeed, studies find that prior sexual victimization affects women's perception of safety in transit environments more than men's (Yavuz and Welch, 2010). At the same time, the already higher rates of sexual harassment experienced by women in transit settings contribute and amplify their perception of insecurity, which reinforces their higher levels of fear.

Avoidance

Fear of harassment can lead to avoidance of transit use. Analyzing data from a survey of 824 MetroLink weekday riders in St. Louis, Kim and Ulfarsson (2012) found that among groups with different demographic and trip characteristics, young females and riders using transit stations with higher crimes were more likely to express doubt over their future use of transit. A recent survey in Los Angeles showed that the transit ridership of a newly built light rail line was significantly lower among women, partly because of safety concerns (Hsu et al., 2019). In the Ile-de-France region of Paris, Jubainville and Vanier (2017) surveyed 3,188 female transit riders finding that 48% of those who had reported feeling unsafe in transit environments considered avoiding using transit after dark, or avoiding certain transit settings, or changing their means of transportation. They also found that about one out of four female riders who had reported feeling unsafe did not have alternative transportation options to change their travel mode and were "transit captives."

Another impact that fear may have on women's behavior is partial avoidance, namely avoiding using the bus or the train during certain times (time-based avoidance) or avoiding certain transit stations or lines (space-based avoidance) (Jubainville and Vanier, 2017). Time-based avoidance usually happens after dark and during times when fewer people are around, which is also when more serious sex crimes like assault and rape tend to happen (Koskela and Pain, 2000).

Jubainville and Vanier (2017) indicate that this type of avoidance is more frequent than space-based avoidance. Moreover, transit systems that are limited in density and extensiveness may not offer alternative routes to allow for avoidance of certain lines or stations. On the other hand, time-based and space-based avoidance can occur simultaneously. A study by Kim et al. (2007) in St. Louis found that higher crime rates at transit stations resulted in female riders preferring to be picked up and dropped off over other modes of to-and-from-station travel such as driving and parking, taking the bus, or walking, and that such avoidance behavior was more prominent at night.

Risk Management

In response to the risk of sexual harassment, some riders are found to exercise risk management, adopting certain behavioral mechanisms to minimize risk. In a study focusing exclusively on sexual harassment of female transit riders, Hsu (2011) found through interviews with 18 female transit riders that those who relied on transit to get to work or school were unable to change transportation modes after being harassed. In response, they exercised behavioral adaptations, such as sitting and standing only near women passengers or strategically placing their bag or backpack to avoid being touched. These findings are consistent with one of the earliest studies on the influence of harassment on women's travel behaviors by Lynch and Atkins (1988). Their survey of 249 women in Southampton, UK, found that women tended to adopt all three types of precautionary measures in response to sexual harassment in public spaces, among which the most mentioned were "do not go out in dark," "do not walk at night," and "try to travel with other people" (Lynch and Atkins, 1988). Other studies find that women transit riders may adopt additional measures to reduce the risk of harassment, including dressing carefully to avoid clothing that can be perceived as provocative, traveling with their dog, and even carrying some repellant or weapon (Stark and Meschik, 2018).

Fear, avoidance, and even risk management behaviors that stem from the risk of sexual harassment constrain mobility. As the more vulnerable group to sexual crimes and harassment in transit environments, women are disproportionately affected and can be adversely impacted in their access to essential urban amenities and opportunities such as jobs, healthcare, or recreation (Lynch and Atkins, 1988). As some scholars have also found, avoidance behaviors also hurt the bottom lines of transit operators as they reduce ridership (Jubainville and Vanier, 2017; Hsu et al., 2019).

Strategies and Interventions

Given the empirical evidence about the influences of the built environment on crime, many have argued that environmental design can affect crime rates and help design out crime. (La Vigne, 1996; Schulz and Gilbert, 1996; Loukaitou-Sideris 1999; Smith and Clarke, 2000; Loukaitou-Sideris et al., 2001; Smith, 2008). However, others point to the limits of design in preventing crime, especially sexual crimes against women. Following the rational choice theory that assumes that criminals are rational and opportunistic and respond to environmental stimuli in "a mechanistic way" (Walklate, 1989, cited in Koskela and Pain, 2000, 277), criminologists Cornish

and Clarke (1986) developed the "situational crime prevention" approach that focuses on design transformations of potential crime settings that help decrease the likelihood of crime. However, such assumptions may not always hold for crimes against women, which need to be examined in the wider context of the regularized and systematic violence against them that is deeply rooted in social and gender inequalities (Dobash and Dobash, 1992, cited in Koskela and Pain, 2000). Understanding women's victimization in such a wider context reveals the limits of design in reducing sexual crimes, yet it should not preclude design strategies from creating safe transit environments for women. What this means is that other strategies tackling the more embedded and persistent social ills are also needed, in addition to design strategies.

Thus, in response to crime and fear of crime in transit environments, transit agencies have been experimenting and adopting specific practices, policies, and programs to reduce and prevent crime and improve passengers' perceptions of safety. Scholars have also been making recommendations to transit agencies on positive interventions based on empirical studies that use data obtained through passenger surveys, interviews, focus groups, and field observations. Recommendations emphasize that crime and sexual harassment in transit environments represent a larger social problem that requires the collaboration of different sectors and agents of society, as well as the use of a variety of approaches (Gekoski et al., 2015; Allen and Vanderschuren, 2016).

Several scholars have attempted to categorize these different interventions. Atkins (1990), after reviewing responses adopted by transit operators, policing agencies, and local and national governments, proposed four main approaches: "policing and staffing of transport systems," "situational crime prevention," "social crime prevention," and "transport service provision." More specifically, policing and staffing relies on the presence of police and staff to maintain order and deter crime. Situational crime prevention aims to reduce criminal activities and opportunities through design; social crime prevention seeks to tackle underlying causes of crime by changing the attitudes or behavior of the potential offenders through social and community liaison; quality of transport service seeks to reduce passengers' exposure to risk by improving the reliability and efficiency of the transit system (Atkins, 1990).

Categorizations that are more recent use different classifications and terms that reflect more directly on the instruments of intervention, but represent somewhat similar logic and patterns. For example, one often-used category is "environmental design," or "crime prevention through environmental design" (CPTED), which is largely based on the principles of situational crime prevention, that seeks to enhance natural surveillance through modifying the transit environment (Schulz and Gilbert, 1996; Loukaitou-Sideris, 2009, 2015; Gekoski et al., 2015). Indeed, starting in the early 1970s, CPTED asserted "that the physical environment can encourage or discourage opportunities for crime by its very design and management" (Cozens et al., 2003, 123) and create "defensible spaces" that remove opportunities for criminals to act (Newman 1972). Similarly, some use "public education," "education and outreach," or "awareness raising" to categorize interventions that effectively

share the same aim with social crime prevention (Loukaitou-Sideris, 2009; 2015; Gekoski et al., 2015).

More recently, "technology" has been used as a separate category of response strategies, as technology can serve a wide range of purposes including enhancing environmental design for safety, formal surveillance through CCTV, and quality of service provision. Such security technologies have improved rapidly in terms of variety and reliability (Schulz and Gilbert, 1996; Gekoski et al., 2015).

Particularly notable is the introduction of new digital technologies in the fight against sexual harassment. These include smartphone apps that riders can use to report sexual harassment in real time and request help, such as the DigiPolice App launched by the Tokyo Metropolitan Police. Victims can activate the app, which immediately starts shouting "Stop it!" while the message "There is a molester!" appears on the smartphone screen. Ito (2019) reports that the app had been downloaded 237, 000 times by May 2019. The nonprofit Hollaback has launched in many different world cities smartphone apps allowing individuals to report where they have been harassed (Loukaitou-Sideris, 2009). Similarly, the HarassMap37 website in Egypt encourages victims to anonymously report the place and type of their victimization in transit settings and other public spaces. This information reveals to the authorities and to the public the hot spots which they should police or avoid respectively (Allen and Vanderschuren, 2016). Finally, the Safetipin App in India provides a safety audit of public environments in nine Indian cities, measuring nine parameters including lighting, the condition of walkways and paths, the presence of people and specifically women on the streets, and computes a Safety Score (Allen and Vanderschuren, 2016).

Table 2.6 presents a summary of anti-harassment interventions recommended in the literature arranged in five categories: Design, Policing, Technology, Policy, and Education & Outreach. We should note that a wide range of these strategies has been introduced through particular programs that often encompass a bundle of interventions from the same or different categories.

While many studies discuss proposed strategies and interventions to reduce sexual harassment, we lack systematic evaluations and metrics of the effectiveness of each strategy. As Gekoski et al. (2015, 8), who sought to review the effectiveness of anti-sexual harassment initiatives, noted: "There are few rigorous evaluations using before and after measures of crime/incidents or randomized control trials to provide evidence of whether such initiatives achieve their aims." Instead, scholars seek to identify the perceptions of women riders and sometimes transportation managers about the efficacy of strategies.

For example, scholars have found that among design strategies, measures to improve visibility (for example through see-through bus shelters and lighting) are often rated very highly by women in terms of reducing their fear of crime (Reed et al., 2000; Gekoski et al., 2015). With regard to policing and staffing, women passengers tend to rate highly increased police and staff presence, when asked to consider the effectiveness of measures to reduce their feelings of insecurity (Gekoski et al., 2015; Loukaitou-Sideris, 2015). In terms of technology, a survey of 800 transit passengers in Michigan in 2000 found that women respondents

Table 2.6
Anti-harassment strategies in transit environments

Design	Policing	Technology	Policy	Education/ Outreach
» Off-hour waiting areas at stations (Schultz & Gilbert 1996) » Good lighting (Schultz and Gilberts 1996; BTPA 2008; Loukaitou-Sideris 2015; Gekoski et al. 2015; Vanier and Jubainville 2017) » Siting bus stops in naturally surveyed areas (Loukaitou-Sideris 2015) » See-through bus shelter design (Loukaitou-Sideris 2015) » Cleanliness & good maintenance of transit stop/ platform (Gekoski et al. 2015)	» Police-onboard programs in high-crime areas and during school release hours (Schultz & Gilbert 1996) » Visible station staff (BTPA 2008)	» Passenger-assist alarms on train cars (Schultz & Gilbert 1996) » Emergency access phones on platforms (Schultz & Gilbert 1996) » Surveillance technologies (CCTV) at stations and parking lots (Schultz & Gilbert 1996; BTPA 2008) » Surveillance cameras on transit vehicles (Schultz & Gilbert 1996) » Real time bus arrival information at bus stops (Gekoski et al. 2015; Loukaitou-Sideris 2015) » Digital platforms and smart phone Apps for harassment reporting (Gekoski et al. 2015; Allen and Vanderschuren 2016)	» Request-A-Stop program (Gekoski et al. 2015) » Security audits by women (Loukaitou-Sideris 2009) » Hotlines to report harassment (Gekoski et al. 2015) » Women-only transit schemes (Loukaitou-Sideris 2009; Gekoski et al. 2015) » Anti-harassment criminal justice measures (Gekoski et al. 2015)	» Public education workshops and anti-harassment campaigns (Loukaitou-Sideris 2015; Vanier and Jubainville 2017) » Anti-harassment signage in public spaces (Loukaitou-Sideris 2015) » Awareness raising through grassroot and community action (Gekoski et al. 2015)

ranked higher than men respondents the presence of emergency telephones for passengers at bus stops and driver-operated emergency alarms on buses (Reed et al., 2000). Another widespread technology strategy employed to reduce crime and harassment is CCTV surveillance, but studies find that many women riders do not feel confident that someone is monitoring the CCTV cameras (Loukaitou-Sideris, 2009; Yavuz and Welsh, 2010). As for the use of newer technologies, such as online platforms and smartphone apps, through online debates and conversations, the evidence is also limited because these represent quite recent developments.

Yet, there is some tentative early evidence that such measures may help increase reporting, as evidenced by the growing number of women using online platforms to share their harassment experiences (Gekoski et al., 2015).

In regards to policy interventions aiming at public education and awareness-raising, limited evidence exists to evaluate their effectiveness. There is also limited evidence of the effectiveness of community and grassroots efforts in raising awareness through education and outreach. This is perhaps because such interventions tend to have more long-term effects than immediate short-term effects, and it is difficult to measure direct relationships (causality) between such interventions and crime reduction. Nonetheless, campaigns aimed at raising public awareness about sexual harassment and encouraging reporting are promising (Gekoski et al., 2015). For example, the Massachusetts Bay Transport Authority (MBTA) reported higher reporting rates and higher arrest rates in the four years after the launch of an anti-harassment education campaign (Gekoski et al., 2015). A recent evaluation of the "Report It To Stop It" campaign, launched in London to encourage reporting of sexual harassment incidents to police, found no difference in attitudes towards reporting between those who had seen the campaign and those who had not, yet an increase in crime reporting was observed after the launch of the campaign (Solymosi et al., 2018). In Brazil, the São Paulo metro initiated the "You are not alone" program in 2014, which includes more resources for security personnel and security technology, training of transit personnel, and campaigns to encourage incident reporting. Ceccato and Paz (2017) found that the program has had mixed results: it has increased reporting, but cannot help victims in real-time.

Another often-debated policy intervention aiming to reduce harassment is the introduction of women-only transportation vehicles. These have been introduced in many countries such as Mexico City, Brazil, Egypt, India, Indonesia, Iran, Japan, Malaysia, Russia, South Korea, Thailand, and the United Arab Emirates (Loukaitou-Sideris, 2009; Gekoski et al., 2015). In fact, a "lady's car" was briefly introduced on the Hudson and Manhattan Railway in New York City in 1909, which reserved the last train carriage for women during rush hours but stopped operations as women users diminished (Hood, 1996). Women-only schemes, although well-received in many cases, raise concerns that such segregation will induce greater gender inequality and perpetuate gender-based discrimination (Loukaitou-Sideris, 2009; Gekoski et al., 2015). The fact that these initiatives are more common in societies with greater male dominance in the public realm is possibly a reflection of the debate outlined here.

What seems to be lacking in these approaches that aim to reduce crime and harassment is a greater emphasis on promoting a larger legislative anti-harassment framework. While acknowledging the difficulty to "administer a system by which women could report harassers and hold them accountable for their behavior," Thompson (1994) also argued that anti-harassment regulations could be legally supported by a passenger's fundamental right to travel. In fact, in England and Wales, greater weight is now given to offenses on public transport because the fact that victims in such situations are enclosed and restricted (or "captive") in the environment is considered to be an aggravating factor (Gekoski et al., 2015). An

anti-harassment legislative framework could, thus, complement and support the aforementioned strategies in order to tackle the social and cultural forces that perpetuate sexual harassment in society.

Conclusion

Summary of Findings

This chapter reviewed and synthesized a growing literature on sexual harassment that seems to be omnipresent in transit environments, yet remains, even today in the #MeToo era, largely underreported. While the literature is quite definitive about the presence of harassment on transit, its reported extent varies because of inconsistent definitions of the term, methodological inconsistencies among the various studies, and differential attributes (such as overcrowding and policing) among the transit systems. And while some large transit agencies have started asking about sexual harassment in their onboard passenger surveys, large-scale studies and surveys of transit riders are still rare, and thus there are gaps in our knowledge of how sexual harassment may affect different sub-groups (differentiated by age, gender, race/ethnicity, sexual orientation, or ability/disability). The few studies that have examined subgroups of women indicate that these characteristics may play a role and affect the incidence of sexual harassment as well as the fear of victimization.

On the other hand, the literature is quite definitive about the existence of a very significant underreporting of sexual harassment and assault crimes. Victims and bystanders are reluctant to report especially the less serious offenses because of embarrassment, perceived inaction by authorities, and sometimes fear of the police.

The literature also indicates that none of the elements of a transit system (the transit vehicles, transit stations, bus stops, and routes to and from the transit station or stop) is immune to the incidence of harassment, though there is no consensus as to which of these settings is more vulnerable since environmental and contextual factors are also at play. A very small set of studies examines the spatial and temporal characteristics of transit settings that relate to a higher incidence of harassment. Different types of harassment are more encouraged in some settings than others: bus overcrowding, for example, may enable improper touching, while a sexual assault is more likely to take place at a desolate bus stop. Some scholars have also identified environmental characteristics of transit settings that may act as deterrents to harassment, if only because they may make such crime more visible to passers-by.

While situational crime prevention through selective targeting of the micro-environments of crime and employment of CPTED techniques has mostly proven successful (Cozens and Love, 2015), the feminist literature disagrees that simple design interventions can adequately address a type of crime that is long ingrained in wider socio-cultural contexts of gender inequalities and patriarchy (Koskela and Pain, 2000). Lastly, the literature discusses different types of strategies against sexual harassment, indicating that a multi-pronged approach may be necessary.

Such approach is composed of design strategies, policing, security technologies, anti-harassment policies, education and outreach campaigns.

Recommendations for Further Research

We complete this literature review with some recommendations for further research. Our review of the literature points to several areas where more research is necessary on the topic of harassment in transit environments and other public spaces. First, we need a more consistent definition of sexual harassment, adopted by researchers, which includes verbal, non-verbal, and physical types of harassment, as described in Table 2.1. Second, we need more systematic documentation of sexual harassment and assault incidents by police and transit authorities, which should include sexual offenses as a separate crime category in their surveys, reports, and databases. New digital technologies such as crowdsourcing can also assist data collection. Third, we should also have more studies about the sexual harassment experiences of particular subgroups (in terms of age, gender, race/ethnicity, sexual orientation, and disability status). Fourth, we need a better understanding of how the spatial and temporal characteristics of a transit setting affect the different types of harassment. Lastly, we need studies about the effectiveness of different anti-harassment strategies and studies that can give us a better understanding of which strategies are better tailored to which particular socio-spatial settings. This research can inform transit operators and policymakers and help make transit travel safer and more pleasurable for a significant part of the public.

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3

**Survey of College Students in
Three University Campuses:
Research Methodology**

To respond to some of the literature gaps identified in the previous section, we undertook an empirical data collection effort and surveyed transit-riding college students in three large Los Angeles area campuses – University of California, Los Angeles (UCLA), California State University, Los Angeles (CSULA), and California State University, Northridge (CSUN). We were interested in examining the students' transit safety concerns and victimization experiences in transit environments. All three universities encourage students to ride transit, providing them with transit passes at significantly discounted rates. Transit-riding college students can be reached through particular campus offices, which maintain contact lists of students holding transit passes.

We conducted a survey of students at the three university campuses—in May 2018 at UCLA, in November 2018 at CSULA, and in May 2019 at CSUN—to find out about student harassment experiences in transit environments. More specifically, we wanted to respond to the following research questions.

Research Questions

> » What is the extent of sexual harassment experienced by university students in transit environments?
> » Do individual characteristics of students affect their risk of victimization and their perception of safety?
> » Do characteristics of the physical or social environment of the transit setting affect students' risk of victimization and their perception of safety?
> » Do students take any precautions to minimize the risk of sexual harassment in transit environments?
> » What measures can lead to reducing sexual harassment incidents in transit settings?

Research Context

The larger geographic context of this study is the city of Los Angeles, where UCLA, CSULA, and CSUN are located. The city (and the three campuses) are served by a large transit network composed of about 14,000 bus stops, four light rail lines and two subway lines serving 93 rail stations (LA Metro n.d., Facts at a Glance) (Figure 3.1). UCLA and CSULA are served by Metro and other municipal bus operators including the Santa Monica Big Blue Bus and Foothill Transit services. The transit center at CSULA is also a Metrolink station, providing commuter rail service.

Los Angeles bus riders are disproportionately female (55%), Latino (66%), and low-income (61% below the poverty line). The sociodemographic profile of railway riders is somewhat different: mostly male (54%), Latino (46%), with 39% falling below the poverty line (Los Angeles Metro 2017). While Los Angeles has the second-largest transit ridership among US cities after New York, transit trips per capita in Los Angeles are significantly fewer compared to New York (Manville, 2019). Indeed, transit ridership has been dropping in Los Angeles over the last decade, a fact that is primarily attributable to increased access to private cars through ride-hailing services but also some passengers' concerns about safety (Manville et al., 2018).

Figure 3.1
Rapid transit network in Los Angeles

Bus service (Metro and BBB)

—— Rapid & Express Bus

—— Local Bus

Metro Rail and BRT

—— Blue Line (A)

—— Red Line (B)

—— Green Line (C)

—— Purple Line (D)

—— Expo Line (E)

—— Orange Line (G)

—— Silver Line (J)

—— Gold Line (L)

—+— Metrolink
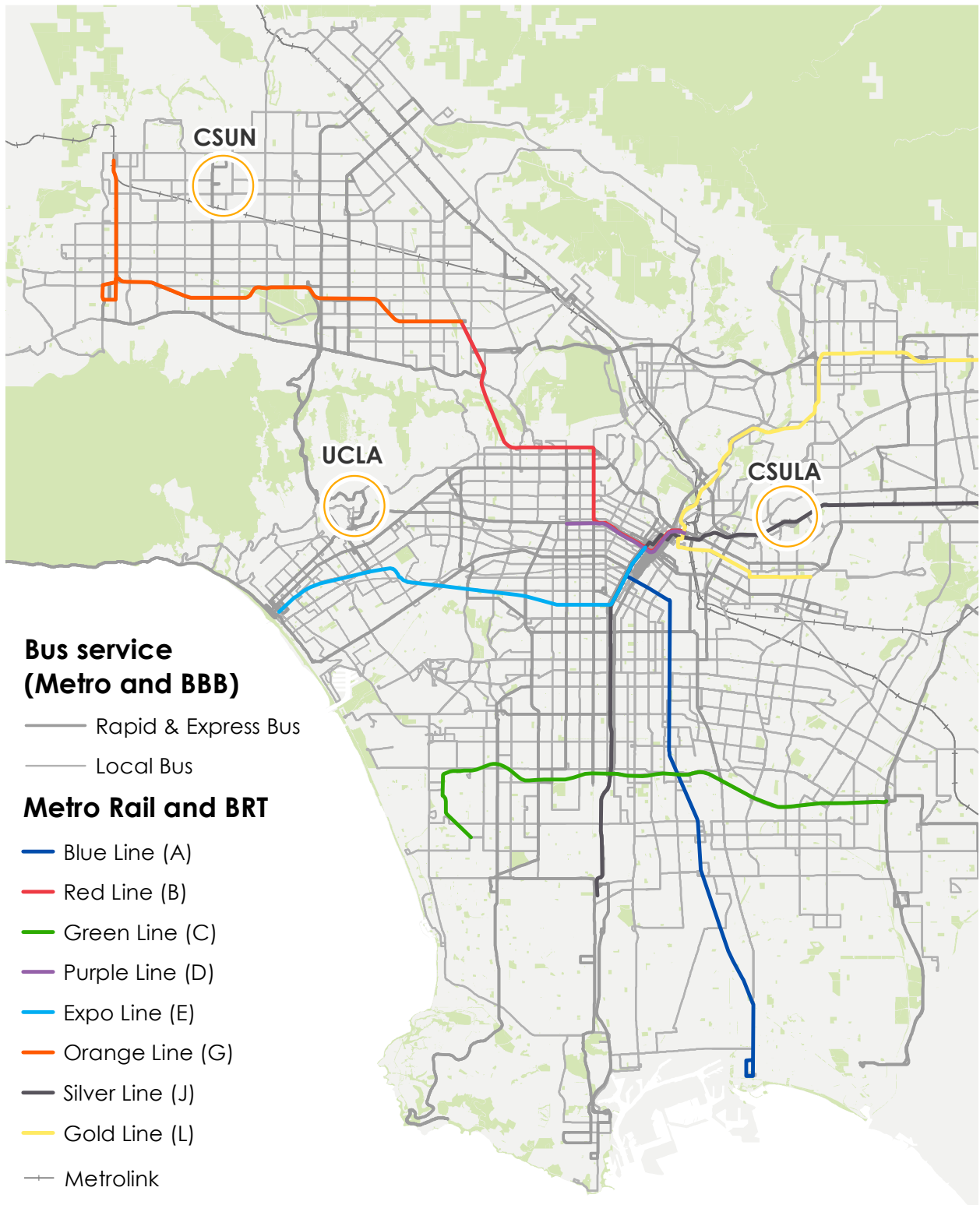
A recent survey showed that transit ridership of a newly built light rail line in Los Angeles was significantly lower among women, partly because of safety concerns (Hsu et al., 2019).

While transit ridership among Los Angeles residents is very low – for example, only 8.9 % of Los Angelenos commute to work by public transit (American Community Survey 2017), college students represent a group that uses public transit in significantly higher percentages than the general public. For example, 26.2% of UCLA students use public transit for their commute to campus (UCLA Transportation, 2018).

UCLA, CSULA, and CSUN represent three large public universities in Los Angeles with racially and ethnically diverse student bodies. Table 3.1 shows the sociodemographic characteristics of the respondents as compared to the student population of their campuses. We received valid survey responses from 1,284 students (63.7% female; 31.9% male; 4.4% other/ or no response). The significant over-representation of female respondents is likely a reflection that sexual harassment is of greater concern to them. In terms of race/ethnicity, 17.4% of students reported as White, 2.6% as Black, 49.3% as Latino, 18% as Asian-American, 0.2% as American Indian, 8.6% as mixed-race, while 3.8% did not report their race/ethnicity. Lastly, 15.5% of the students in the sample self-reported as LGBTQI (Lesbian-Gay-Bisexual-Transgender-Queer-Intersex).

Research Methods

We employed a 51-question survey instrument used by Ceccato and Loukaitou-Sideris (forthcoming 2020) in a global study of sexual harassment (see Appendix A). UCLA's Institutional Review Board (IRB) reviewed the questionnaire and survey distribution plan and certified the study as exempt[5]. We sent the survey to all students on the three campuses who had transit passes. Each campus maintains an email list of transit pass holders because students purchase transit passes through the university, which subsidizes the cost.

At UCLA, a survey link was distributed by email from the office of UCLA Transportation Services to 3,406 UCLA students holding a transit pass; we received back 390 completed questionnaires (11.5% response rate) at this campus. At CSULA, a survey link was distributed by the campus Department of Public Safety, which oversees campus parking and transportation services. A total of 3,480 students received the survey link, and we received back 646 completed questionnaires (18.6% response rate). Lastly, at CSUN, the transit pass program is administered through the Associated Students Association, who provided the UCLA research team with a list of email addresses for the 2,221 student transit pass holders. The UCLA Institute of Transportation Studies distributed a survey link to these students; and thus, researchers had no personally identifiable information for the survey participants. The CSUN survey link received back a total of 248 completed questionnaires (11.2% response rate).

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5 UCLA IRB #17-000686

The survey asked respondents about a wide variety of different experiences when using public transit (bus and rail separately), including:

- » If they had been the victim of such sexual harassment;
- » If they had reported their victimization;
- » If they had witnessed sexual harassment against others on the transit system;
- » How safe they felt riding transit or waiting for the bus or the train during the day or night;
- » What types of problems they encountered in the physical or social environment of transit settings; and
- » What safety precautions, if any, they typically take when using public transit.

Additionally, respondents were asked questions about their age, gender, race/ethnicity, and sexual orientation, and had the opportunity to add comments about the topic at the end of the questionnaire.

For each theme, we compared the results across genders. We used chi-square tests to check for statistically significant differences between gender groups, racial/ethnic groups, and between groups who did and did not self-identify as LGBTQI. We also used logistic regression models to determine which of three different categories of variables –individual characteristics of students, characteristics of the physical environment of the setting, and characteristics of the social environment of the setting (as reported by students)—significantly affected the incidence of sexual victimization of students as well as their perception of safety in transit environments.

Victimization was measured by asking respondents the question: "In the last three years have you experienced any of the following while traveling on, heading to, or waiting for the bus or rail?" The question listed 16 different harassment behaviors and asked students to "check all that apply." (see Table 3.2). Perception of safety was measured asking the respondents to evaluate if they felt safe (using a Likert scale from always to never); a separate question was asked for day and nighttime and for waiting for and riding the bus or the train. Table 3.3 shows the dependent and independent variables for the regression models.

Table 3.1

Sociodemographic profile of UCLA, CSULA, and CSUN students compared to the survey samples

	UCLA students	UCLA Survey (N=390)	CSULA students	CSULA Survey (N=646)	CSUN students	CSUN Survey (N=248)
Female	24,307 (53.5%)	238 (61%)	16,165 (52%)	412 (63.8%)	21,340 (55.1%)	168 (68.7%)
Male	21,121 (46.5%)	133 (34.1%)	11,520 (48%)	202 (31.3%)	17,376 (44.9%)	74 (29.8%)
LGBTQI	No info	77 (19.7%)	No info	77 (11.9%)	No info	39 (15.7%)
White	13,420 (36%)	166 (42.6%)	1,764 (7.1%)	28 (4.3%)	8,537 (24.2%)	29 (11.7%)
Black	1,363 (3.7%)	7 (1.8%)	982 (3.9%)	14 (2.2%)	1,790 (5.1%)	13 (5.2%)
Asian-American/ Pacific Islander	11,588 (31.1%)	95 (24.4%)	3,621 (14.5%)	103 (15.9%)	4,070 (11.5%)	33 (13.3%)
Latino/a/x	8,407 (22.5%)	61 (15.6%)	18,105 (72.6%)	423 (65.5%)	19,663 (55.7%)	149 (60.1%)
American-Indian	382 (1%)	2 (0.2%)	20 (0.1%)	0 (0%)	45 (0.1%)	1 (0.4%)
Mixed-Race	2,127 (5.7%)	43 (11.0%)	443 (1.8%)	45 (7.0%)	1,197 (3.4%)	23 (9.3%)
No information	8,141	16 (4.1%)	2,750	33 (5.1%)	3,414	0

Table 3.2

Types of sexual harassment/assault behavior in public

Verbal	» Making sexual comments (about clothing, looks, etc.)
	» Whistling; making kissing sounds
	» Calling a stranger babe, honey, sweetheart
	» Asking for sex
	» Making unwanted sexual remarks or sexual teasing
	» Asking personal questions about sexual life
	» Using obscene/abusive language
Non-verbal	» Making unwanted sexual gestures
	» Masturbating in public
	» Showing pornographic images
	» Indecent exposure
	» Stalking
Physical	» Unwanted kissing
	» Pulling or playing with someone's hair
	» Groping, touching inappropriately
	» Rape

Table 3.3

Variables used in the regression models

Dependent variable	Independent variables

Sexual harassment (all types) victimization on transit
    Bus
    Rail
	Individual characteristics
	
	» Gender
	» LGBTQI (dummy variables)
	» Race (White, Asian, Latino)
	» Age (dummy: <30 or 30+)
	» Transit use frequency* (dummy; transit use at least 3 times per week)
	Physical environment characteristics
	» Poorly illuminated
	» Poorly guarded
	» Vandalism, graffiti or litter
	Social environment characteristics
	» Panhandling
	» Drug use/sales
	» Drunk people

Safety perception
    On the bus during the day
    On the bus during the night
    On the train during the day
    On the train during the night
	Individual characteristics
	» Gender
	» LGBTQI
	» Race/Ethnicity
	» Age
	» Frequency of transit use
	» Short commute
	» Prior sexual victimization
	Physical environment characteristics
	» Poorly illuminated
	» Poorly guarded
	» Vandalism, graffiti or litter
	Social environment characteristics
	» Panhandling
	» Drug use/sales
	» Drunk people

Research Challenges

Our empirical study also faced the following challenges:

» *Difficulty of convincing administrators on some campuses.* While we had no difficulty convincing the administrators on our campus (UCLA) about the merits of this study and received their permission and support to distribute our survey to students, this was not the case with some other universities. A couple of Universities that we initially approached were hesitant that the topic was sensitive and ultimately did not distribute our survey to their students, nor they provided a means for us to distribute the survey to transit pass holders directly.

» *Difficulty of ensuring a larger sample size in one university.* We had set the goal of ensuring a minimum sample size of 300 students from each campus, but this proved to be not feasible in one University (CSUN). We believe this was a result of the survey being sent to students through UCLA rather than their home university. While CSUN was willing to provide us access to the contact information for transit pass holders, they would not distribute the survey link directly. As a result, we received less responses at this campus compared to the other campuses which directly distributed the survey link.

» *Difficulty of ensuring a gender-balanced sample size.* We also had difficulty achieving a gender-balanced sample and were ultimately unable to do so, because we found that female students were much more eager than male students to respond to a survey about sexual harassment. Female responses typically outnumbered male responses by at least 2:1.

» *Small sub-samples.* While the relatively large samples of students allowed for a robust statistical analysis across gender, the typically smaller sub-samples of LGBTQI students or students of specific ethnic/race backgrounds (such as African American or Native American) prevented a robust statistical analysis of victimization patterns among different subgroups.

» *Difficulty adding in geographic information:* The original survey instrument did not ask students to indicate the geographic locations of the most common transit stops they were using. Since we suspected that the location and crime characteristics of the transit setting may contribute to safety perceptions, we sought to add a question about the location to the surveys distributed to CSULA and CSUN. However, SurveyMonkey, our survey administration tool, does not have a feature that allows a respondent to select a point on a map. We, therefore, asked respondents to "please list the closest intersection (other than those to the university) to the transit stop you are most commonly using." The resulting answers, however, were often imprecise and incomplete. Many of the students reported taking long transit trips, and some of the most common intersections appeared to be at common transfer points like at Los Angeles Union Station.

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4

Survey of College Students in Three University Campuses: Findings

This chapter describes our survey findings in the three campuses regarding the extent of female and male student victimization, student perceptions of safety at different types of transit settings, student perceived problems in transit settings, their extent of harassment reporting, and students' suggestion on how to tackle harassment in transit environments.

Victimization

We found that sexual harassment was a very common experience among college students at the three campuses: 72% of respondents using the bus system and 48% of respondents using the rail system reported having experienced at least one sexual harassment behavior at a transit setting over the last three years. Both individual student characteristics and transit setting environmental characteristics seemed to affect the incidence of harassment.

As Figures 4.1 and 4.2 show, students experienced verbal harassment more commonly than non-verbal or physical harassment with higher percentages of students reporting sexual harassment on the bus system than on the train system. Men and women face different types of harassment across the varying transit settings (Table 4.1). Men face more harassment on the transit vehicle, while women face verbal harassment and non-verbal harassment across all points of their transit journey. However, physical harassment of women most frequently occurred on the bus.

Differences in victimization

Certain subgroups of students were more harassed than other groups. *Gender* was a very clear factor affecting harassment, as significantly higher percentages of women than men reported experiencing sexual harassment; chi-square tests confirmed that this differential gender experience was statistically significant ($p<0.001$).

Race/ethnicity was also a significant factor affecting victimization; however, different types of harassment affected different racial/ethnic groups differently.

Table 4.1

Harassment experiences by category, location, and gender

		Bus			Train		
		To/From	Waiting	On vehicle	To/From	Waiting	On vehicle
		% Victimized			% Victimized		
Women	**Verbal**	55%	62%	60%	37%	40%	42%
	Non-verbal	42%	46%	44%	28%	29%	33%
	Physical	4%	6%	16%	3%	4%	7%
Men	**Verbal**	17%	30%	38%	12%	17%	20%
	Non-verbal	14%	15%	19%	7%	10%	10%
	Physical	1%	3%	5%	1%	2%	2%

Figure 4.1

Types of sexual harassment experienced by students on the bus system
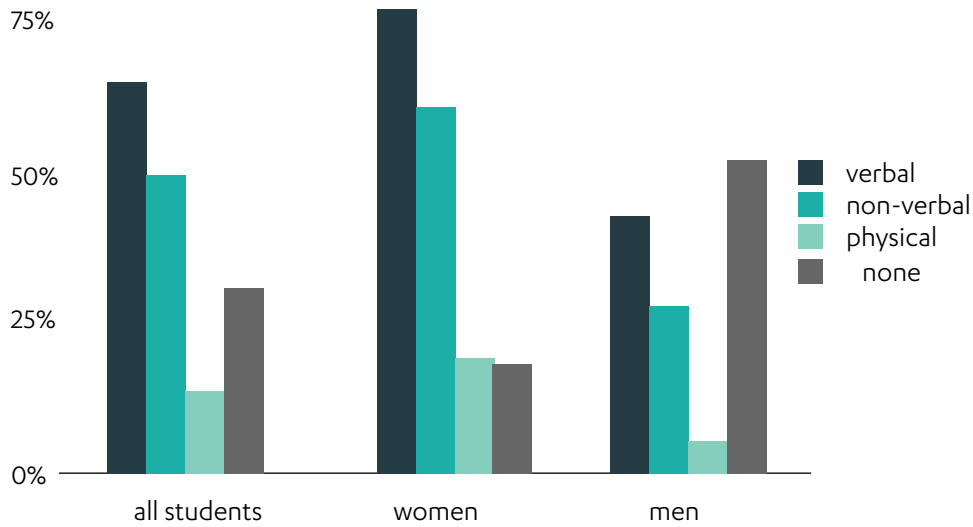
Figure 4.2

Types of sexual harassment experienced by students on the train system
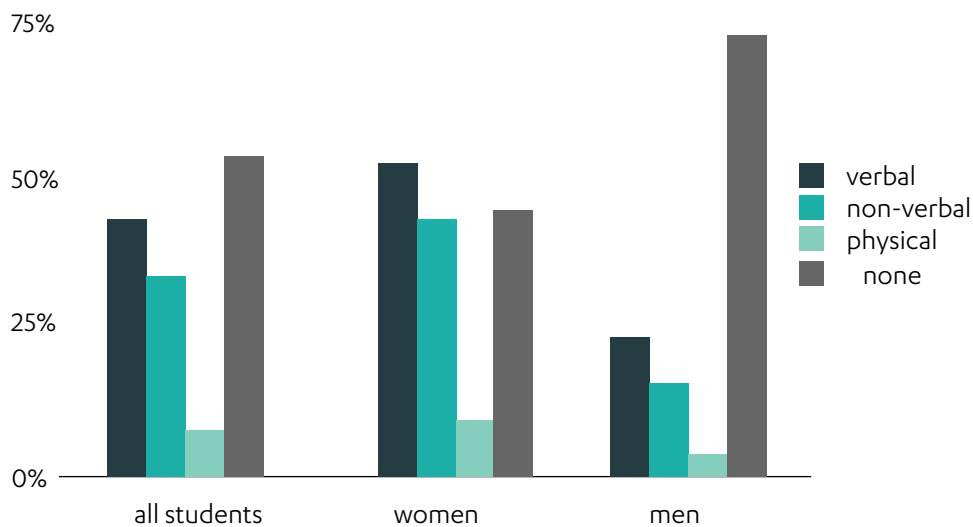
Thus, chi-square tests showed that White students were more likely to indicate having been victims of verbal harassment ($p=0.017$); Latino ($p<0.001$) and Asian students ($p=0.002$) were more likely to report victimization from nonverbal harassment, and Latino ($p=0.022$) and White ($p=0.012$) students were more likely to report having been exposed to physical harassment. The very small numbers of African American and Native American respondents prevented us from examining their experiences separately.

According to chi-square tests, *sexual orientation* affected victimization in one transit mode: LGBTQI students run a statistically significant higher chance of being sexually victimized than straight students, but only on the subway (p=0.002). However, when we divided the LGBTQI sample into LGBTQI women and LGBTQI men, we saw that LGBTQI men were not statistically more likely to be victimized than other men on the bus or train; in contrast, LGBTQI women were statistically more likely to be victims than straight women or straight men on either transit mode (p=0.003).

Lastly, *frequency of transit use* affected victimization: bus or train riders using transit three or more days per week were more likely victims of sexual harassment (Figure 4.3).

To better understand the relative significance of the multiple independent variables on the incidence of student victimization from sexual harassment, we ran two regression models (Table 4.2) examining victimization in the bus and train systems separately. In both models, the most significant predicting variable of sexual harassment was gender: depending on the transit mode, female students

Figure 4.3

Differences in victimization among different groups of riders for all transit, bus and rail
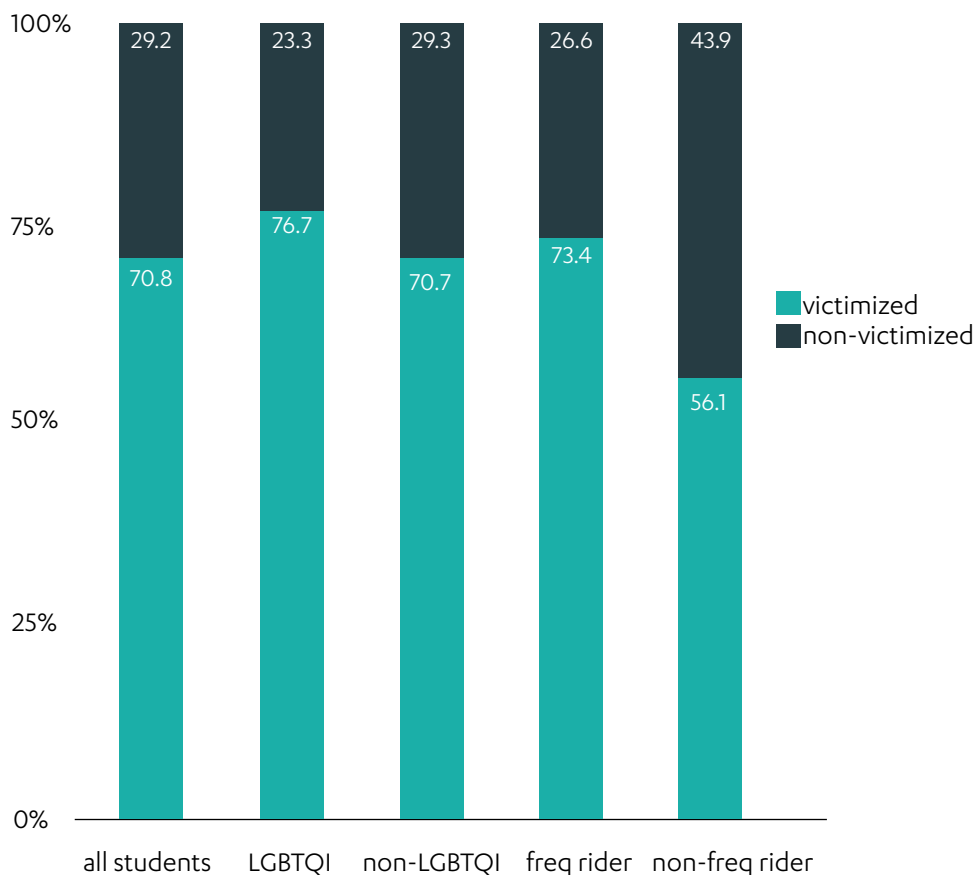
Table 4.2

Regression models for victimization

	Sexual harassment on bus system (N=1,068)			Sexual harassment on rail system (N=798)		
	Coef.	**CI 95%**	**P**	**Coef.**	**CI 95%**	**P**
Individual attributes						
Female	**1.709*****	1.373	2.044	0.000	**1.575*****	1.165	1.984	0.000
LGBTQI	**0.515***	0.05	0.981	0.030	**0.732****	0.262	1.202	0.002
Latino	0.00686	-0.544	0.558	0.981	0.00279	-0.57	0.576	0.992
Asian	-0.00529	-0.592	0.582	0.986	-0.259	-0.911	0.392	0.435
White	0.379	-0.182	0.940	0.185	**0.685***	0.070	1.301	0.029
Age	0.454	-0.034	0.941	0.068	-0.543	-1.123	0.037	0.067
Frequent transit rider	-0.176	-0.650	0.298	0.467	**0.699*****	0.302	1.097	0.001
Short commute	**-0.924*****	01.349	-0.498	0.000	0.0988	-0.424	0.621	0.711
Characteristics of the physical environment						
Poorly illuminated	**0.515****	0.154	0.877	0.005	0.268	-0.125	0.661	0.182
Poorly guarded	0.264	-0.140	0.668	0.200	0.214	-0.214	0.643	0.327
Vandalism/litter	0.293	-0.086	0.672	0.129	**0.769*****	0.320	1.219	0.001
Characteristics of the social environment						
Panhandling	**0.616****	0.197	1.037	0.004	**0.692****	0.263	1.121	0.002
Drunk people	**1.076*****	0.690	1.461	0.000	**1.279*****	0.851	1.707	0.000
Drug use/sales	0.121	-0.324	0.566	0.594	0.375	-0.091	0.841	0.115
constant	**-1.627*****	-2.450	-0.805	0.000	**2.920*****	-3.783	-2.056	0.000

*p< 0.05, **p<0.01, ***p<0.001

were 1.6-1.7 times more likely to be harassed than male students. LGBTQI students run a statistically significant higher risk of victimization in both bus and train settings while being White was statistically significant only for the rail model (p= 0.05). Not surprisingly, students using the rail more than three times per week had a higher risk of being sexually harassed; however, we did not find a similar relationship between the frequency of bus use and sexual harassment. Students having short bus commutes were less likely to be harassed on the bus, but a short commute was not a statistically significant variable for the rail system.

Some characteristics of the social environment of a transit setting, as reported by students, namely the presence of drunk people (p=0.001) and panhandlers (p=0.01) were statistically significant factors relating to sexual harassment for both the bus and rail systems. Additionally, certain characteristics of the physical environment were also related to a higher risk for sexual harassment: students indicating encountering vandalism/litter on the train system (p=0.001) or poorly illuminated bus stops (p=0.01) run a statistically significant higher risk of victimization.

Safety Perceptions

Studies on transit crime find that women riders are more likely to feel unsafe and exhibit higher levels of anxiety in transit environments than their male counterparts (Smith and Cornish, 2006). In a survey of transit riders waiting for the bus at the ten most crime-ridden bus stops in Los Angeles, 59% of the surveyed women felt unsafe, compared to 41% of the men (Loukaitou-Sideris, 1999). This fear on the part of female riders may relate to their higher risk of sexual victimization on buses, at bus stops, and on trains (Best, 2013). Our survey found statistically significant gender differences among students in their perception of safety while traveling or waiting for the transit vehicle. While 45% of male students "always" felt safe waiting for or riding the bus during the day, only about 26% of female students felt "always" safe (Figures 4.4 and 4.5); and while a bit over 40% of male subway riders "always" felt safe riding or waiting for the train during daytime, only a bit over 20% of female

Figure 4.4

Gender differences in safety perceptions on the bus during the day
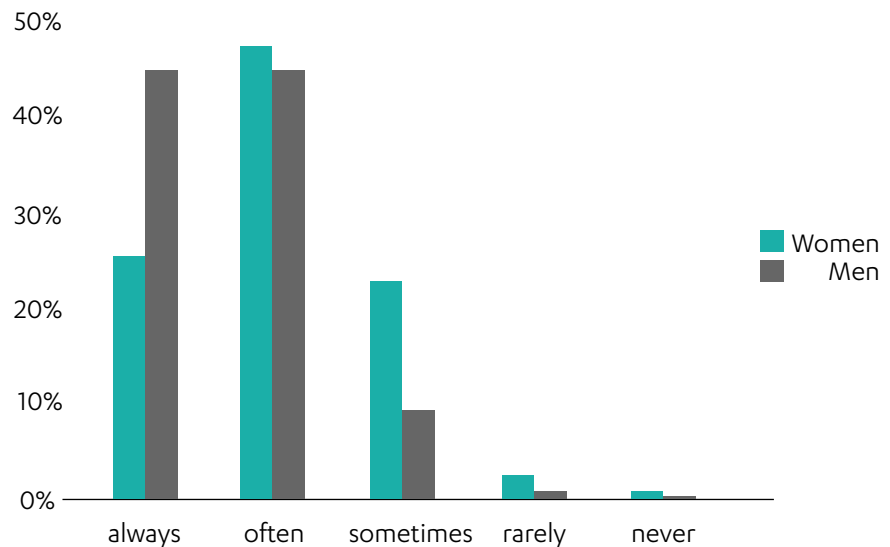
Figure 4.5

Gender differences in safety perceptions waiting for the bus during the day
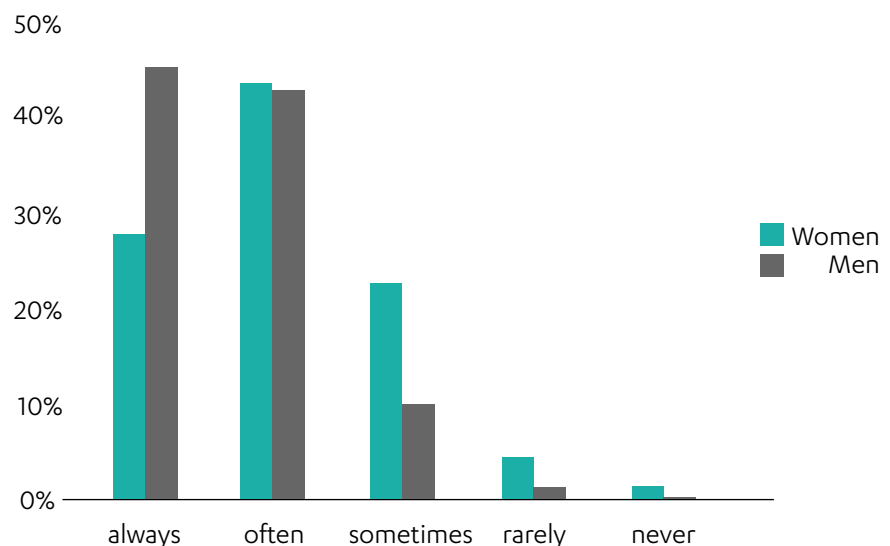
riders indicated the same (Figures 4.6 and 4.7). For both genders, perceptions of safety in the bus or rail systems were significantly lower during nighttime. However, statistically significantly higher numbers of women than men riders never felt safe waiting for or using the bus or the subway at night (Figures 4.8-4.11).

Perceived Problems

Overall higher percentages of women than men expressed concerns about different problems they encountered during their transit trips (Figures 4.12-4.15). For female students, the most highly cited problem on the bus was the invasion of their personal space, with almost 60% of female students complaining about this issue (Figure 4.12). The most significant problem reported by more than half of the male students on the bus was the presence of drunk people. Other problems on the bus such as the use of obscene language, verbal or physical threats and sexual harassment were more visible to female students.

Figure 4.6

Gender differences in safety perceptions on the subway during the day

Women
Men
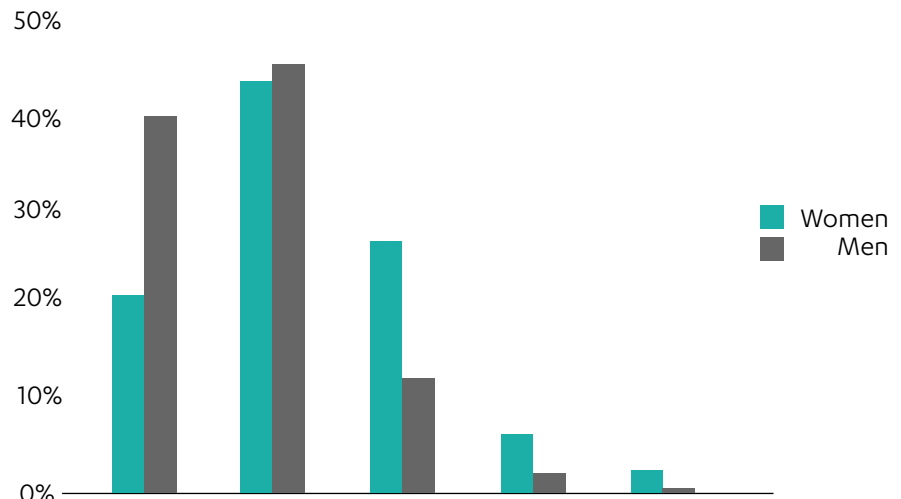
Figure 4.7

Gender differences in safety perceptions waiting for the subway during the day

Women
Men

always often sometimes rarely never
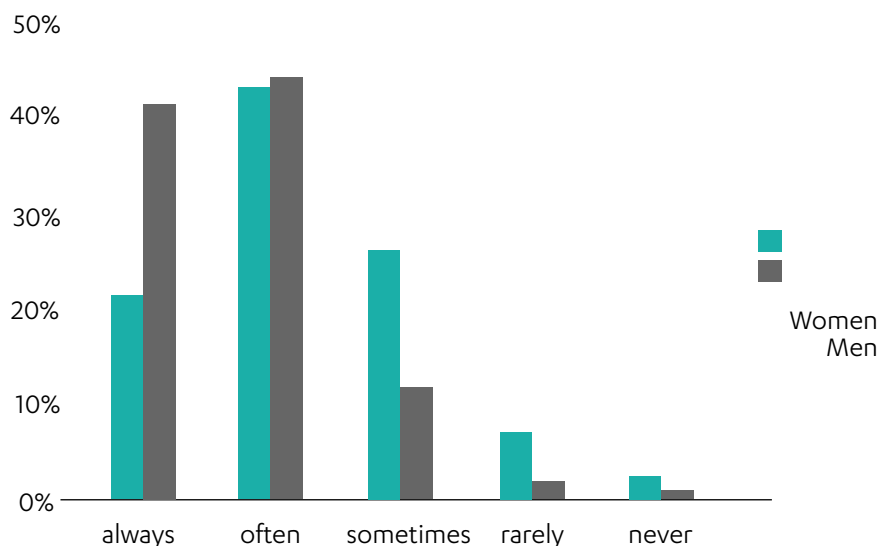
Figure 4.8

Gender differences in safety perceptions on the bus after dark
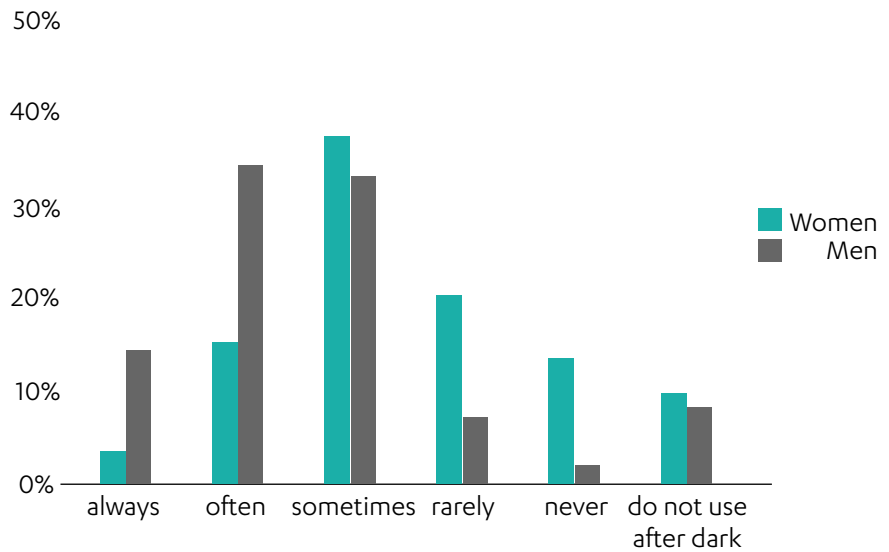
Figure 4.9

Gender differences in safety perceptions waiting for the bus after dark
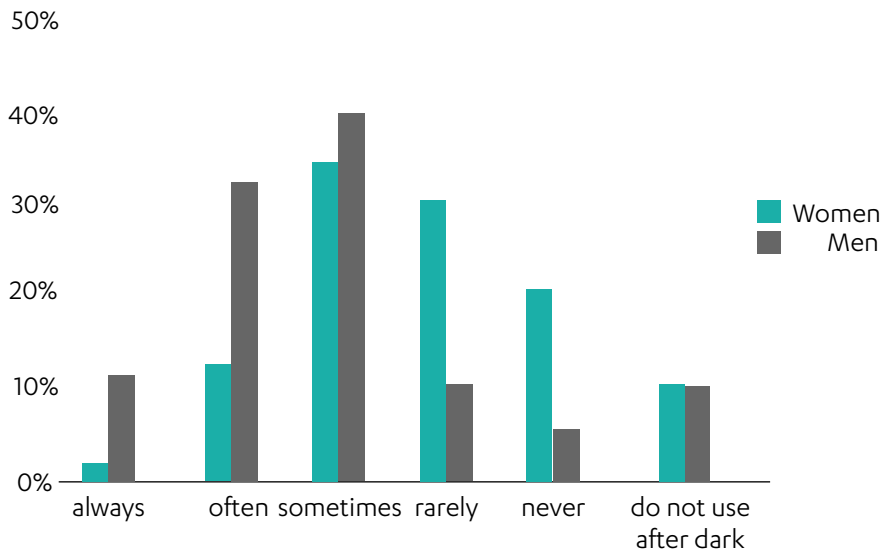
The most significant problem mentioned by more than half of the female respondents at the bus stops was their poor illumination. Poor lighting is not a concern for only women, as 44% of the male respondents also mentioned lighting as a perceived problem. Other significant problems mentioned by a significant number of female riders included the presence of drunk people, vandalism, poorly guarded and desolate bus stops verbal or physical threats, and sexual harassment (Figure 4.13). The same issues were mentioned by a statistically significant lower percentage of male respondents.

For the subway, the presence of drunk people was the most commonly perceived problem by both female and male respondents, even though, again, higher percentages of women than men complained about this issue. The use of obscene language, vandalism, sexual harassment, and verbal and physical threats were issues that were more commonly reported by female than male respondents (Figure 4.14).

Figure 4.10

Gender differences in safety perceptions on the subway after dark
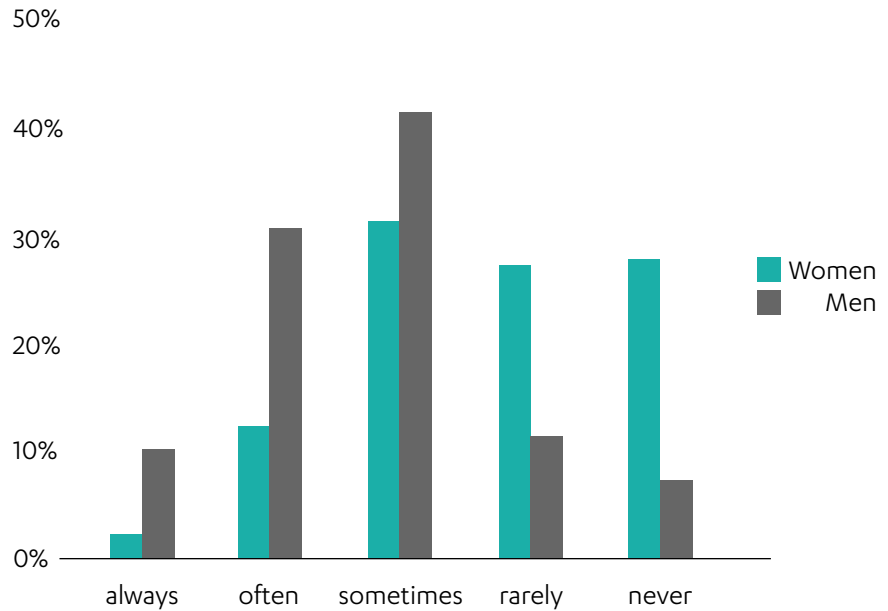
Figure 4.11

Gender differences in safety perceptions waiting for the subway after dark
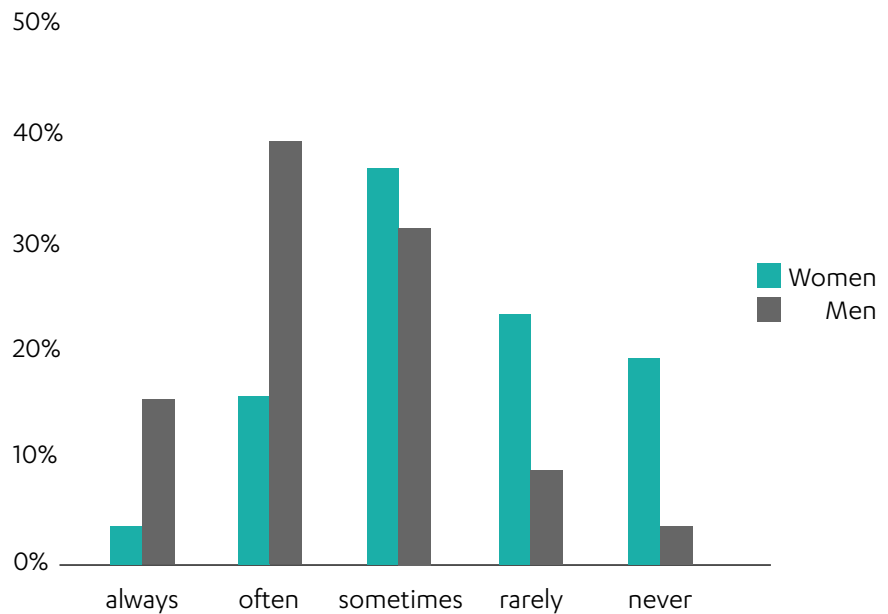
Lastly, the presence of drunk people on station platforms was the problem that gathered the most significant number of complaints by both male and female riders. Other significant problems that seemed to affect at least one-third of the female riders included the use of obscene language, verbal or physical threats, desolate and poorly guarded platforms, sexual harassment, and drug use sales (Figure 4.15).

To better understand the relative significance of the different independent variables on students' perceptions of safety while traveling on transit or waiting for the transit vehicle, we ran four linear regression models which examined safety perceptions: 1) in the bus system during daytime; 2) in the train system during daytime; 3) in the bus system during nighttime, and 4) in the train system during nighttime. The results of these regression models are presented in Table 4.3.

Figure 4.12

Figure 4.12

Gender differences in perceived problems on the bus

drunk people
obscene language
verbal/physical threats
vandalism
sexual harassment
pickpocketing
drug use/sales
robbery
panhandling
violent crime
poorly guarded/empty most of the day
jewelry snatching
poorly illuminated
isolated

Women
Men

0%   25%   50%   75%
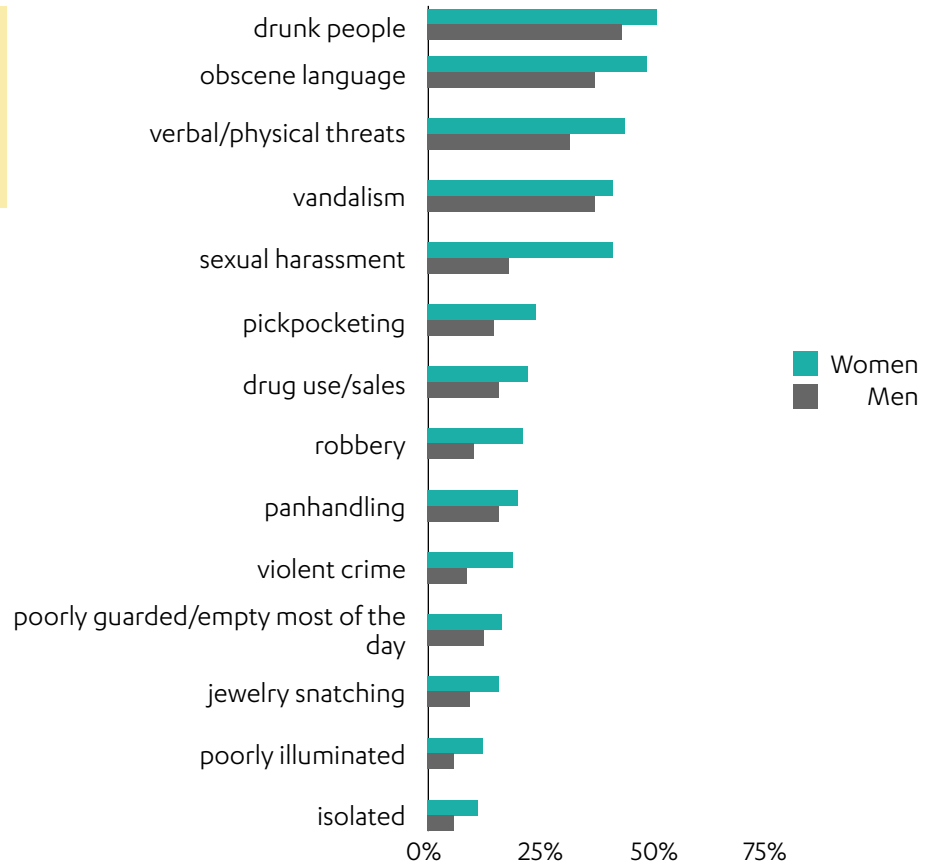
Figure 4.13

Gender differences in perceived problems at the bus stop

poorly illuminated
drunk people
vandalism
poorly guarded/empty most of the day
verbal/physical threats
sexual harassment
isolated
obscene language
panhandling
drug use/sales
robbery
violent crime
jewelry snatching
pickpocketing

Women
Men

0%   25%   50%   75%
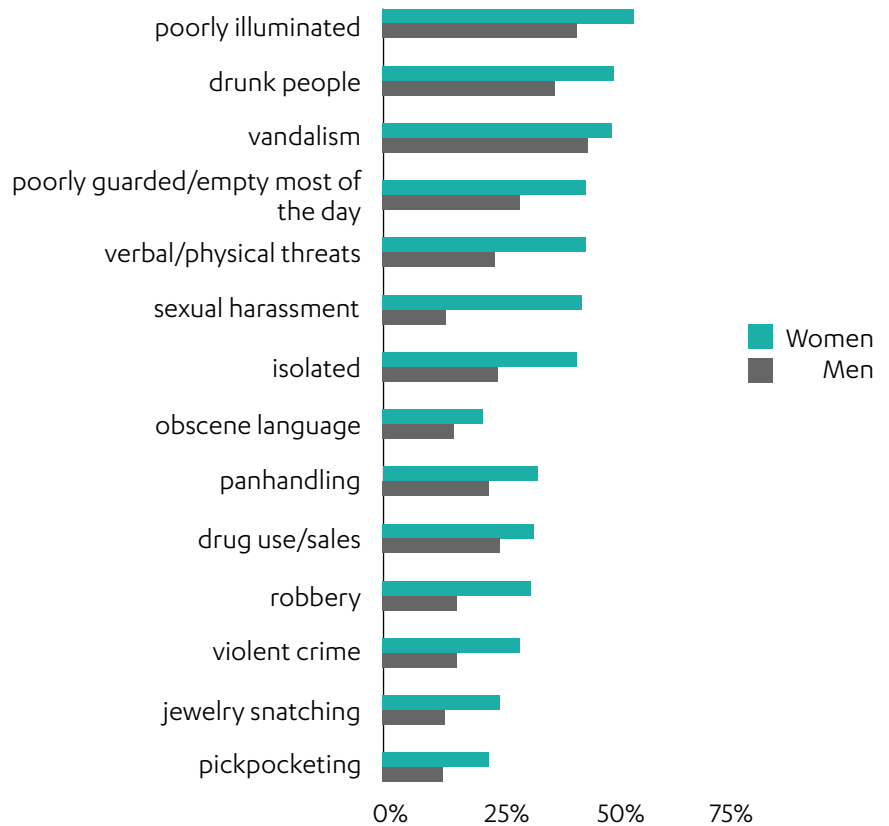
Figure 4.14

Gender differences in perceived problems on the train

	Women	Men
poorly illuminated		
drunk people		
vandalism		
poorly guarded/empty most of the day		
verbal/physical threats		
sexual harassment		
isolated		
obscene language		
panhandling		
drug use/sales		
robbery		
violent crime		
jewelry snatching		
pickpocketing		

0%   25%   50%   75%
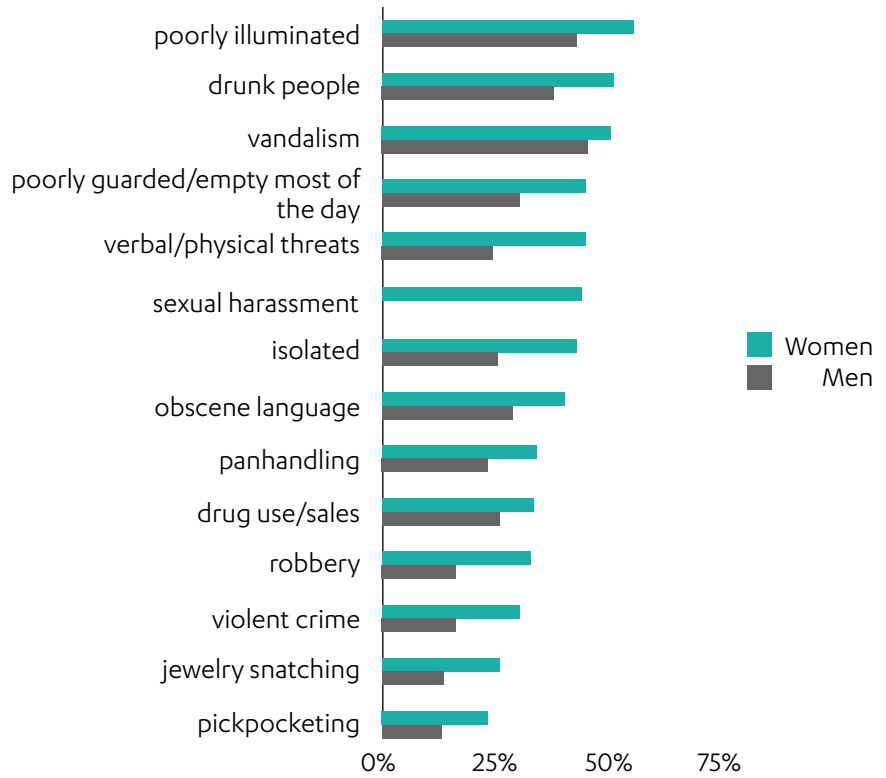
Figure 4.15

Gender differences in perceived problems at the train station

	Women	Men
drunk people		
obscene language		
vandalism		
verbal/physical threats		
poorly guarded/ empty most of the day		
sexual harassment		
drug use/sales		
poorly illuminated		
panhandling		
robbery		
violent crime		
pickpocketing		
jewelry snatching		
poor design		

0%   10%   20%   30%   40%   50%
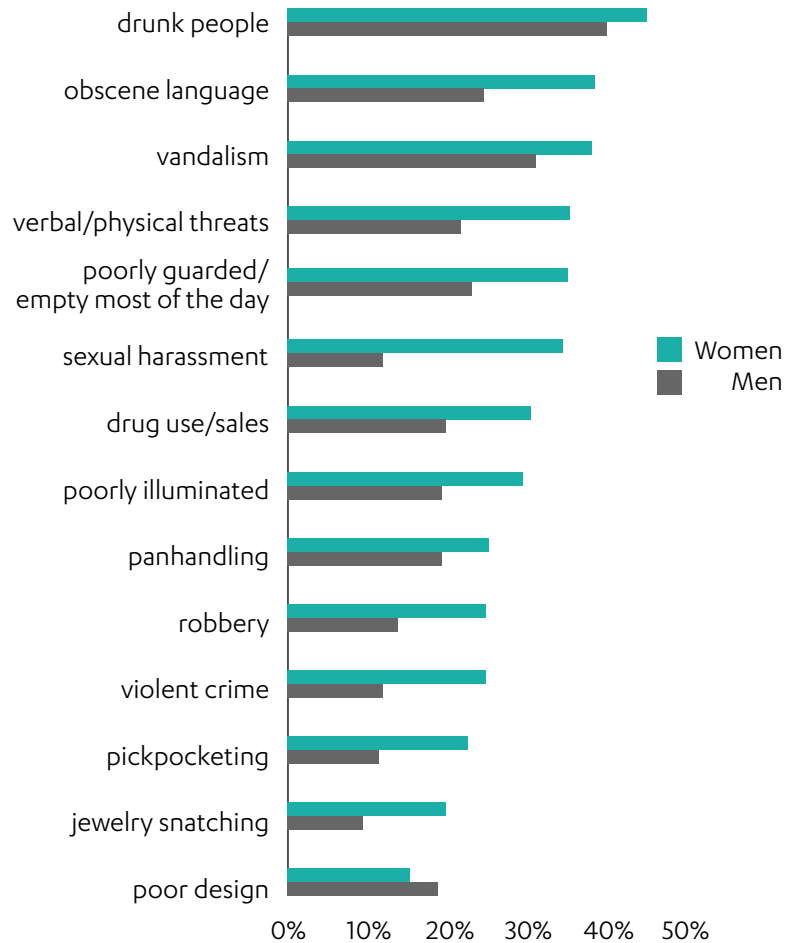
Table 4.3

Linear regression models for perception of safety

| | DAY | | | | | | | | NIGHT | | | | | | | |
| | Perception of safety waiting for or riding the bus (N=1,067) | | | | Perception of safety waiting for or riding the train (N=667) | | | | Perception of safety waiting for or riding the bus (N=1059) | | | | Perception of safety waiting for or riding the train (N=449) | | | |
	Coef.	CI 95%		P	Coef.	CI 95%		P	Coef.	CI 95%		P	Coef.	CI 95%		P
Individual attributes																
Female	0.257***	0.158	0.355	0.000	0.367***	0.225	0.510	5.06	0.726***	0.588	0.863	0.000	0.874***	0.588	0.863	0.000
LGBTQI	-0.0190	-0.136	0.098	0.750	-0.0381	-0.196	0.119	0.48	0.0643	-0.098	0.227	0.437	-0.0967	-0.098	0.227	0.437
Latino	-0.000543	-0.145	0.144	0.994	0.146	-0.0543	0.347	1.43	0.0955	-0.104	0.295	0.348	0.225	-0.104	0.295	0.348
Asian	-0.0504	-0.207	0.106	0.529	0.0374	-0.189	0.264	0.32	-0.121	-0.339	0.096	0.274	-0.162	-0.339	0.096	0.274
White	-0.0907	-0.239	0.058	0.230	-0.0712	-0.281	0.139	0.66	-0.478***	-0.684	-0.273	0.000	-0.296	-0.684	-0.273	0.000
Age	0.0754	-0.065	0.216	0.292	-0.0409	-0.230	0.148	0.43	0.414***	0.219	0.610	0.000	0.139	0.219	0.610	0.000
Freq. transit rider	0.0804	-0.050	0.210	0.226	0.256*	-0.0562	0.459	2.52	-0.0705	-0.251	0.110	0.445	0.0892	-0.251	0.110	0.445
Short Commute	-0.0471	-0.167	0.073	0.443	-0.0167	-0.213	0.180	0.17	0.113	-0.055	0.281	0.186	0.226	-0.055	0.281	0.186
Prior experiences of victimization																
Nonverbal	0.119*	0.014	0.223	0.026	0.0846	-0.0646	0.234	1.11	0.140	-0.006	0.286	0.061	-0.0241	-0.006	0.286	0.061
Verbal	0.0604	-0.051	0.171	0.286	0.103	-0.0571	0.263	1.26	-0.0249	-0.180	0.130	0.753	0.129	-0.180	0.130	0.753
Physical	0.101	-0.028	0.230	0.124	0.0272	-0.145	0.199	0.31	0.0840	-0.095	0.263	0.358	-0.0800	-0.095	0.263	0.358
Characteristics of the physical environment																
Poorly illuminated	0.0105	-0.091	0.113	0.840	0.00969	-0.138	0.157	0.13	-0.0671	-0.210	0.075	0.356	0.123	-0.210	0.075	0.356
Poorly guarded/empty	0.156**	0.049	0.264	0.004	0.234**	0.0779	0.391	2.94	0.284***	0.134	0.434	0.000	0.299*	0.134	0.434	0.000
Vandalism/litter	0.0953	-0.011	0.202	0.080	0.0831	-0.0734	0.239	1.04	0.150*	0.001	0.299	0.048	0.114	0.001	0.299	0.048
Characteristics of the social environment																
Panhandling	-0.00255	-0.107	0.102	0.962	-0.161*	-0.322	-0.015	2.17	-0.0423	-0.188	0.103	0.568	-0.163	-0.188	0.103	0.568
Drunk people	0.138*	0.028	0.249	0.014	0.0668	-0.0931	0.227	0.82	0.165*	0.012	0.319	0.035	0.0429	0.012	0.319	0.035
Drug use/sales	0.218***	0.106	0.330	0.000	0.171*	0.00902	0.333	2.07	0.208**	0.051	0.364	0.009	0.0502	0.051	0.364	0.009
constant	1.239***	1.016	1.463	0.000	1.238***	0.918	1.559	7.58	2.097***	1.786	2.408	0.000	2.051***	1.786	2.408	0.000
Adjusted R-square	0.192				0.168				0.288				0.288			

*p< 0.05, **p<0.01, ***p<0.001

*Note that the dependent variable is the average score of multiple questions: safety ranking of waiting for a travel mode and safety ranking of using a travel mode.

Across all four models, the most significant independent variable was gender, with female students much more likely than male students to express feeling less safe during their travel with the bus or rail or while waiting for the transit vehicle. White students and older students (30 years or older) were more likely to feel unsafe after dark waiting for or riding the bus. On the other hand, race/ethnicity or age were not significant variables for students' perception of safety for the train (day or night) of for the bus during the day. Similarly, sexual orientation was not a significant predictor of fear for either mode.

The only environmental variable that was a significant predictor of fear across all models was "poorly guarded/empty" transit settings. Social environment characteristics including the presence of drug sales ($p=0.001$) or drunk people ($p=0.01$) at the transit setting were statistically significant predictors of fear during day and night but only for the bus system. Lastly, the only prior victimization that was a significant predictor of fear was nonverbal harassment (for those waiting for or riding the bus during the day). Overall, gender was the variable most strongly associated with fear, followed by characteristics of the physical and social environment (e.g. empty and desolate stops, drunk people, etc.).

Precautions

Studies find that perceptions of lack of safety may affect women's travel behavior, leading women to adopt precautionary measures ranging from the adoption of certain behavioral mechanisms when in public, to choosing specific routes, travel modes and transit environments over others, or completely avoiding particular settings and activities such as walking or bicycling (Loukaitou-Sideris, 2014).

Our survey found that 65% of female students felt the need to take some precautions during their transit trips compared to only 30% of male students who did the same. Figures 4.16 and 4.17 show the types of precautions taken by female and male student bus and train riders, respectively. Table 4.4 shows the three most common precautions adopted by female bus riders and rail riders. Additionally, Table 4.4 shows that significantly lower percentages of male riders felt the need to adopt similar strategies. Female students exercised both risk management strategies (dressing a certain way to avoid attracting attention, standing near the door, waiting for transit only in well-lit places), as well as avoidance strategies (avoiding travel after dark). One-third of female students reported carrying a weapon or an object as a weapon (keys, pepper spray, small knife, etc.), while only 15% of male students indicated the same.

While the slow journey times and unreliable bus service were the most important reasons that prevented most students from using bus transit more frequently, female students also listed anti-social behavior (44%), fear of victimization (34%), and sexual harassment (33%), as important factors. In general, there were fewer complaints about the rail; the three top reasons that female students reported as preventing them from using the subway more frequently were anti-social behavior (35%), fear of sexual harassment (31%), and fear of victimization (30%).

Table 4.4

Table 4.4

Most significant precautions adopted by students

	% of women adopting this behavior	% of men adopting this behavior
BUS SYSTEM		
1. Dressing a certain way	53%	14%
2. Traveling only during daytime	52%	33%
3. Waiting for transit only in well-lit places	51%	0%
RAIL SYSTEM		
1. Traveling only during daytime	44%	26%
2. Dressing a certain way	43%	15%
3. Standing close to the door	36%	22%

Reporting

Consistent with the findings of other studies, the survey found very significant underreporting of sexual harassment incidents among students. Only 10.3% of all the students who had experienced or observed crimes of sexual harassment on transit had reported the incident, and reporting percentages were very similar among male and female students. (Figure 4.18). As Figure 4.18 shows, reporting rates were very low among different student groups. The most common reasons given for not reporting included: "did not believe that the offender would be caught," "to avoid trouble," "the incident was not very serious," "did not know how to report it" and "was embarrassed," or "wishing to forget." Higher percentages of female than male respondents gave the justifications above for not reporting an incident (Figure 4.19). The presence of bystanders did not appear to increase reporting: 64% of men and 68% of women, who had witnessed a sexual crime on transit, pretended not to see it; only 20% of women and 18% of men came forward and talked to the victim, and 14% of women talked to the offender; none of the men reporting being witnesses to a harassment incident did so.

Student-Suggested Safety Measures

Both male and female students had similar suggestions for safety improvements, indicating better lighting, digital timetables at bus stops, security cameras at bus stops and on the bus, and police patrolling at bus stops as the most significant interventions for the bus system (Figure 4.20). Students indicated police patrolling of subways and stations, better lighting, and digital timetables at stations as the most important interventions for the subway system (Figure 4.21). These are important first steps that transit operators can take to ease perceptions of fear and counteract the prevalence of harassment. However, more is necessary, as we will discuss in the concluding chapter of this report.

Los Angeles Results in the International Context

As described previously, a network of researchers around the globe have worked collaboratively to distribute the survey to students in different cities. Each global site used an identical or nearly identical instrument and similarly surveyed college students in their city/university (Figure 4.22). This approach provides an opportunity to understand how the Los Angeles findings compare with the results from the 17 other cities that participated in the global study (Ceccato and Loukaitou-Sideris, forthcoming).

Overall, the global study found that the incidence of sexual harassment on transit is universal, with female riders affected significantly more than male riders but with variations among cities regarding the extent of harassment experienced by students. As can be seen in Figure 4.23, with 84% of female students and 50% of male students reporting experiencing some form of harassment on the bus system, Los Angeles falls somewhere in the middle of the cases. Los Angeles's victimization rates are somewhat higher to those of the other two North American cities San Jose, California and Vancouver. Los Angeles students experience lower rates of victimization than students in Mexico City, São Paulo, Manila, and Lagos, but higher victimization rates than students in the East Asian cities of Tokyo and Guangzhou, and western European cities of Stockholm, Huddinge, or London. On the other hand, Figure 4.24 shows that student-experienced harassment on the train system in Los Angeles is relatively low when compared to some other cities of the global study. Still, 57% of female students and 28% of male students reported having experienced some form of harassment on the train.

In Los Angeles, as in most cities, LGBTQI students reported somewhat higher rates of victimization on both the bus and train systems than non-LGBTQI students; however, these differences were not statistically significant (Figures 4.25 and 4.26).

Except for students in Lagos, Mexico City, Bogota, and São Paulo, 10% or less of students in other cities reported being exposed to serious crime (Figure 4.27). Ten percent of Los Angeles students indicated having such experiences, and this percentage is very similar to the reported experiences of students in San Jose and Vancouver.

Except for the Chinese city of Guangzhou, where 70% of students indicated that they have reported incidents of sexual harassment—mostly to friends or family— the level of reporting of such crime in other cities was very low. But Los Angeles had one of the lowest rates of reporting: only 10% of students who had experienced sexual harassment on transit had reported it (Figure 4.28).

Lastly and interestingly, 19% of females and 49% of male students in Los Angeles reported feeling "always" or "often" safe after dark on the bus (Figure 4.29). This metric put Los Angeles male students somewhere in the middle, in comparison to male students in other cities, but put Los Angeles female students in the lower third in comparison to female students in other cities.

Figure 4.16
Gender differences in taking precautions while using the bus

Dress a certain way
Travel only during daytime
Wait at only well-lit places
Sit close to driver
Avoid carrying purses
Avoid particular stops
Carry some kind of weapon
Wait only if other people present
Avoid wearing jewelry
Avoid particular lines
Always travel with someone

■ Women
■ Men

0% 25% 50% 75%
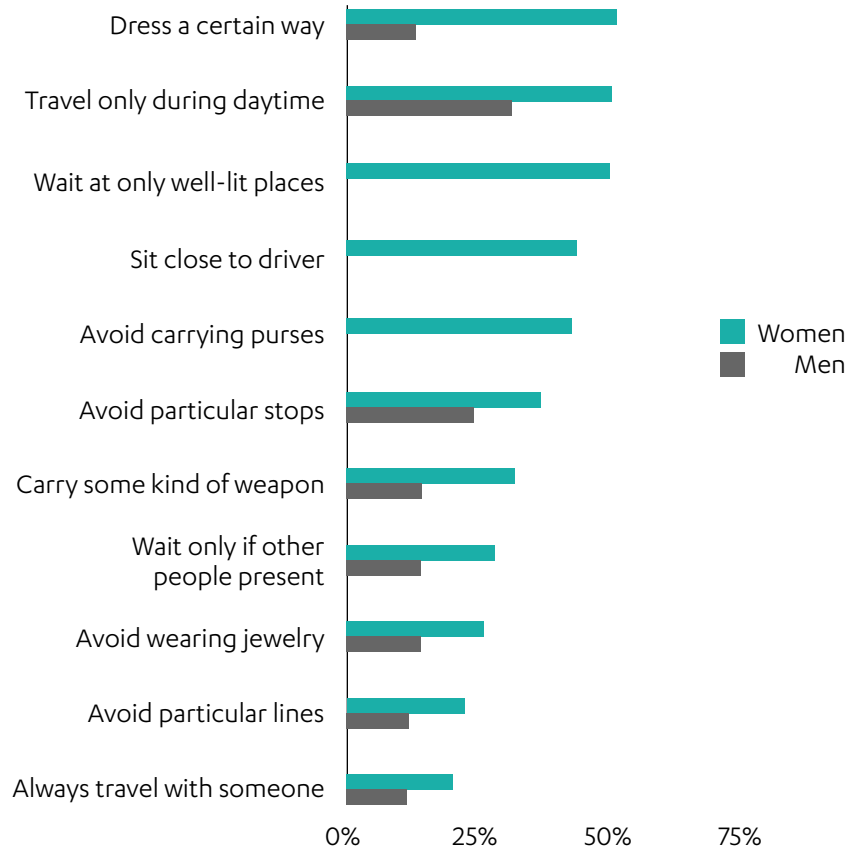
Figure 4.17
Gender differences in taking precautions while using the train

Travel only during daytime
Dress a certain way
Avoid carrying purses
Sit close to driver
Carry some kind of weapon
Avoid particular stops
Avoid wearing jewelry
Always travel with someone
Avoid particular lines

■ Women
■ Men

0% 10% 20% 30% 40% 50%
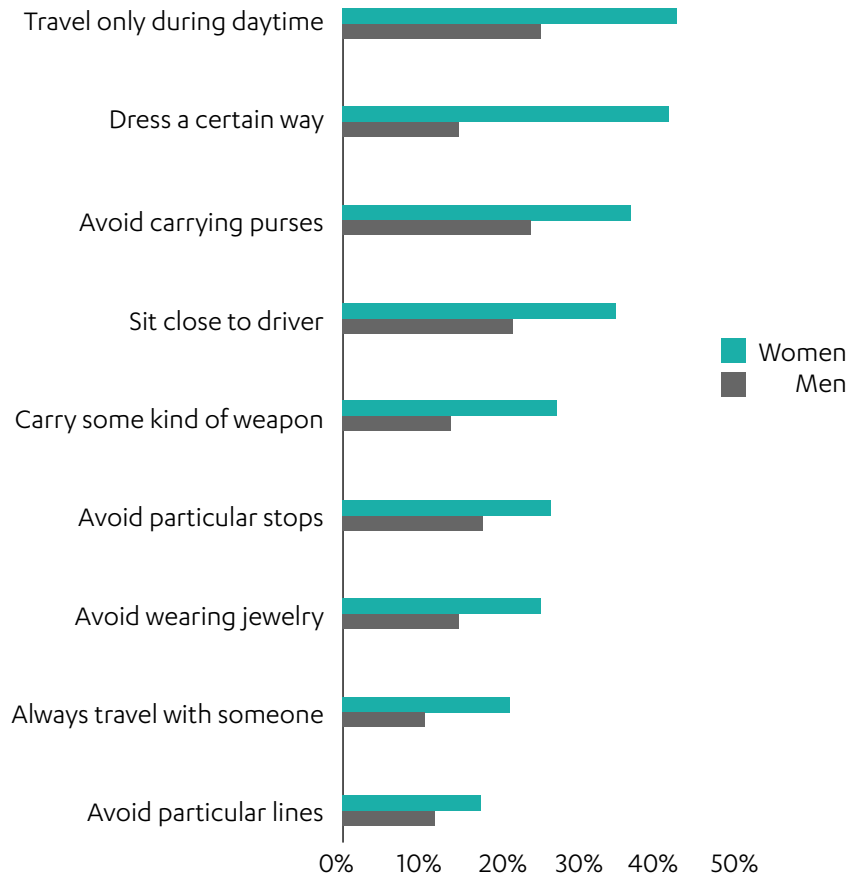
Figure 4.18
Differences in reporting rates among different student groups

Reported / Did not report values by group:

Group	Reported	Did not report
all students	10.3	89.7
women	10.1	89.9
men	10.4%	89.6
LGBTQI	9.5	90.5
non-LGBTQI	10.5	89.5
white	10.1	89.9
asian	11.1	88.9
hispanic	11.2	88.8
freq. rider	11.6	88.4
non-freq. rider	3.1	95.9
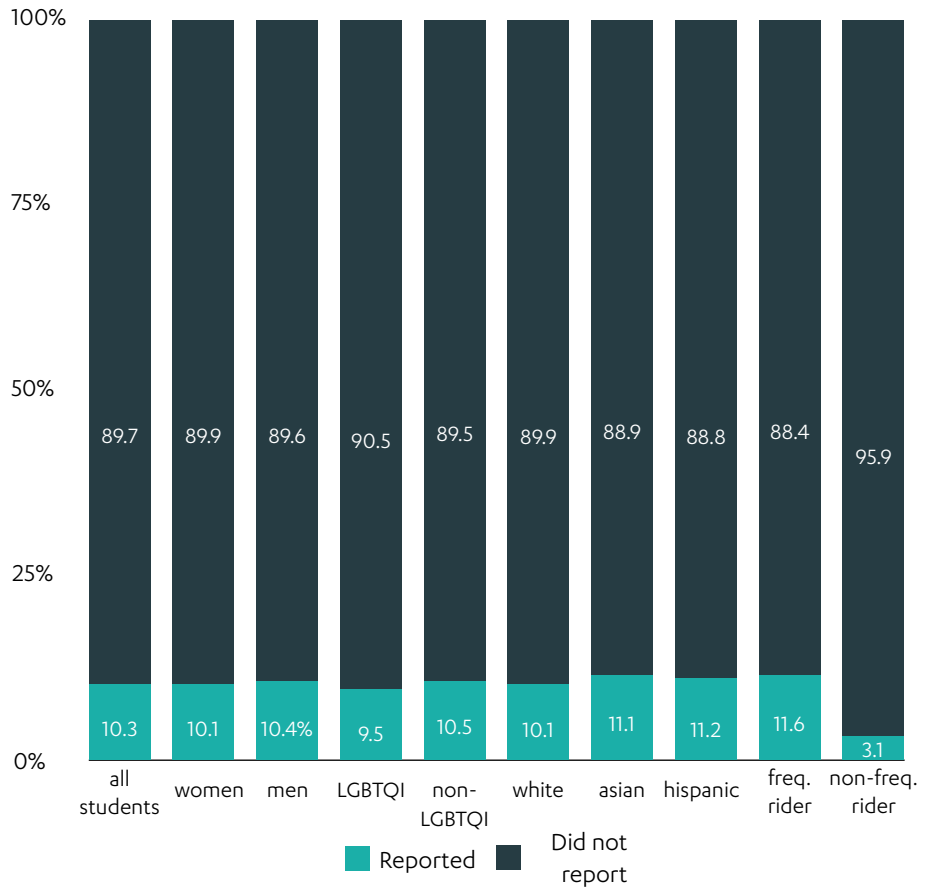
Figure 4.19
Stated reasons for incident underreporting

Women / Men

Not believing offender would be caught
Wishing to avoid trouble
Feeling crime was unserious
Not knowing how to report
Embarrassment
Wishing to forget
Fear of police

0% 10% 20% 30% 40% 50%
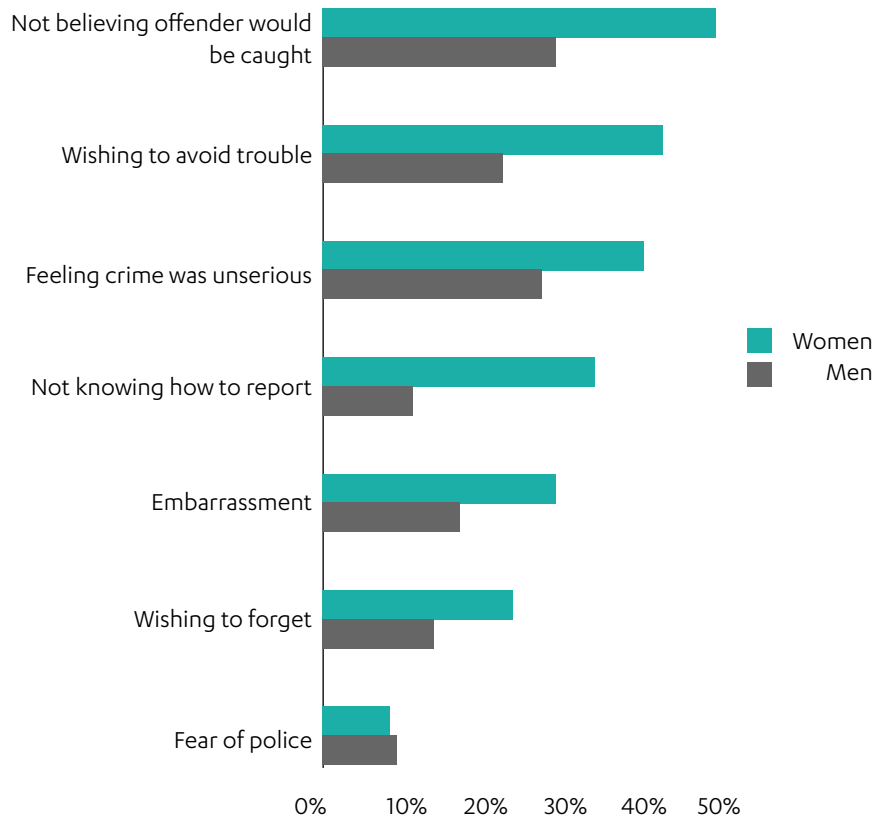
Figure 4.20
Student suggested safety measures for the bus system

more lighting at bus stops
police patrolling bus stops
frequent services
cameras at bus stops
digital timetable at bus stops
cameras on buses
police patrolling buses
direct police line at bus stops
direct police line on buses
"women only" buses
campaigns

Women
Men

0%   25%   50%   75%
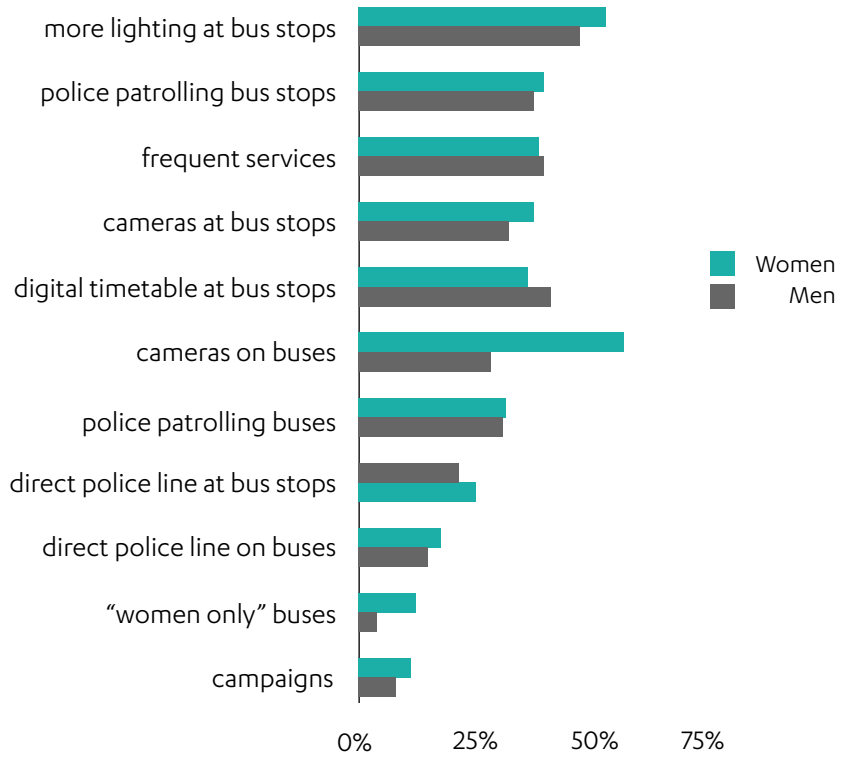
Figure 4.21
Student suggested safety measures for the train system

police patrolling subway stations
police patrolling subways
cameras on subways
cameras at subway stations
more lighting at subway stations
direct police line on subways
direct police line at subway stations
frequent service
direct timetable at subway stations
"women only" subways
campaigns

Women
Men

0%   10%   20%   30%   40%   50%
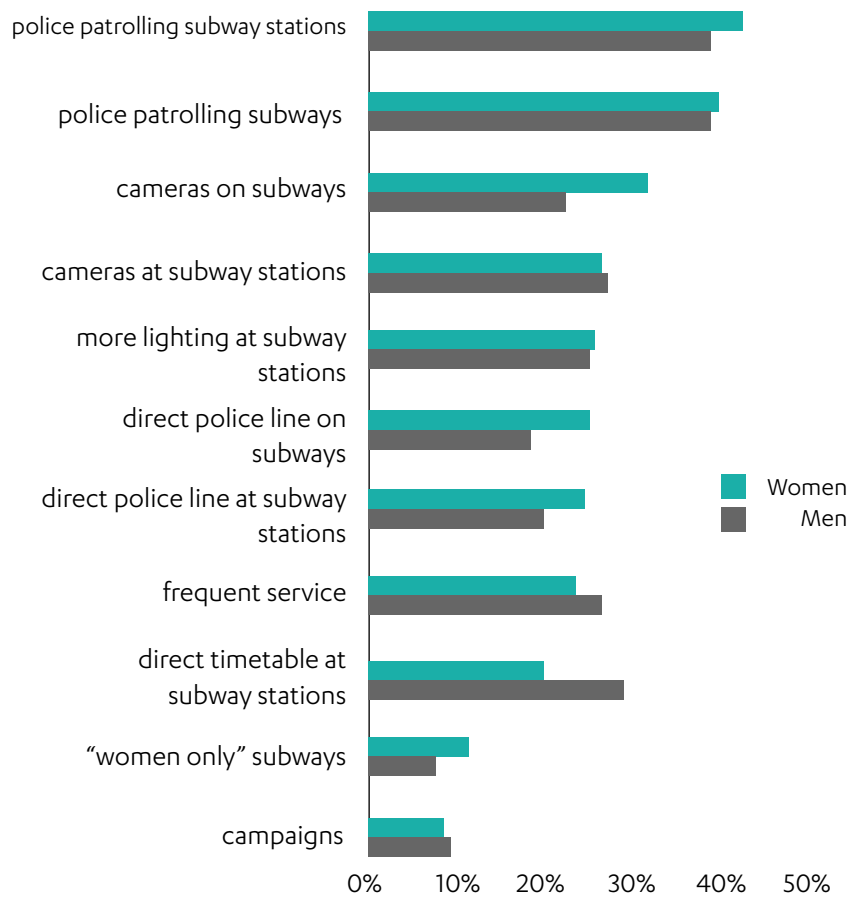
Figure 4.22
Map of global cities in student survey

Tokyo

Guangzhou

Manila

Melbourne

Huddinge Stockholm

London Paris Milan

Lisbon

Lagos

Rio Claro
São Paulo

Bogota

Mexico City

Vancouver

Los Angeles

San
Jose

Figure 4.23

Percent of students experiencing sexual harassment on the bus system, global examples

Legend: Women, Men

X-axis: Mexico City, São Paulo, Manilo, Lagos, Los Angeles, Rio Claro, Lisbon, Milan, Vancouver, San Jose, Paris, Bogota, Melbourne, London, Huddinge, Guangzhou, Stockholm, Tokyo
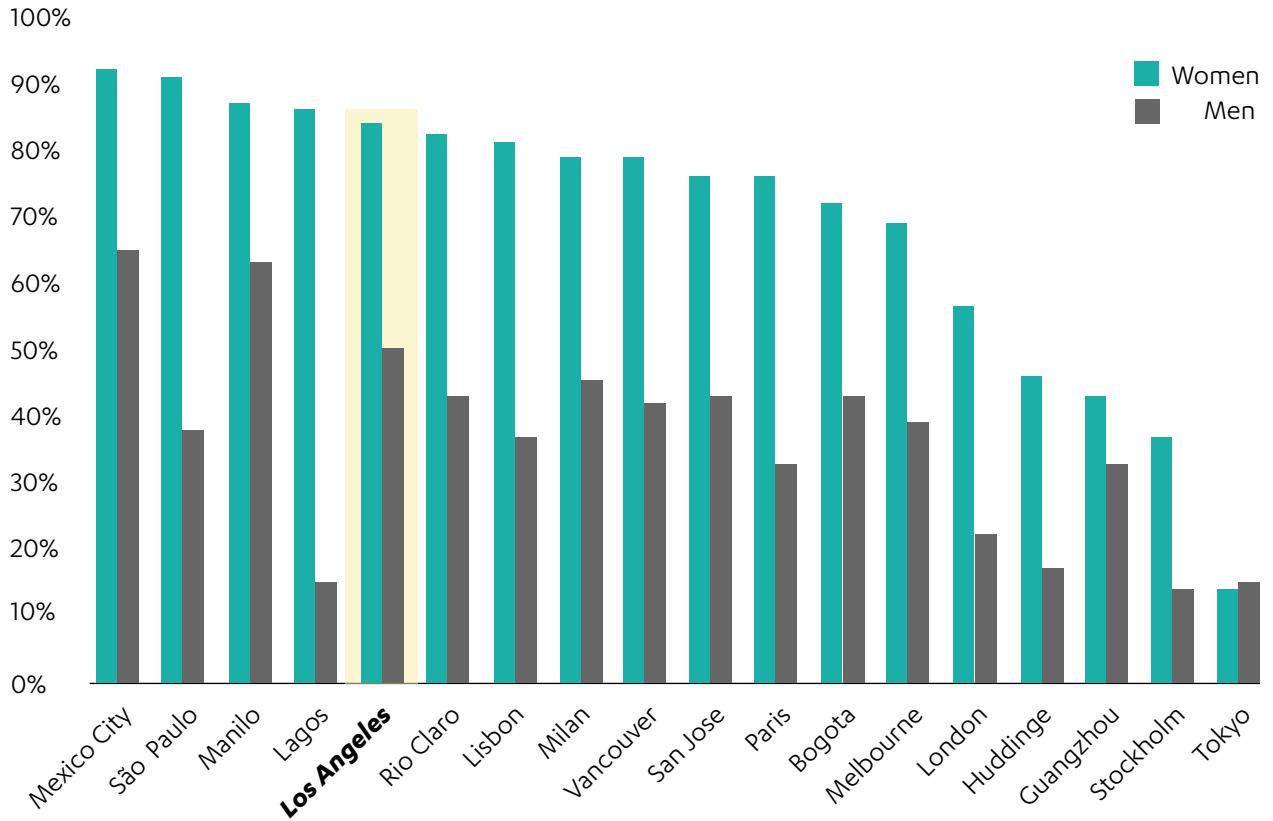
Figure 4.24

Percent of students experiencing sexual harassment on the train system, global examples

Legend: Women, Men

X-axis: Paris, Mexico City, Lisbon, Manila, São Paulo, Milan, Bogota, Huddinge, Vancouver, Melbourne, Stockholm, Los Angeles, San Jose, London, Tokyo, Guangzhou
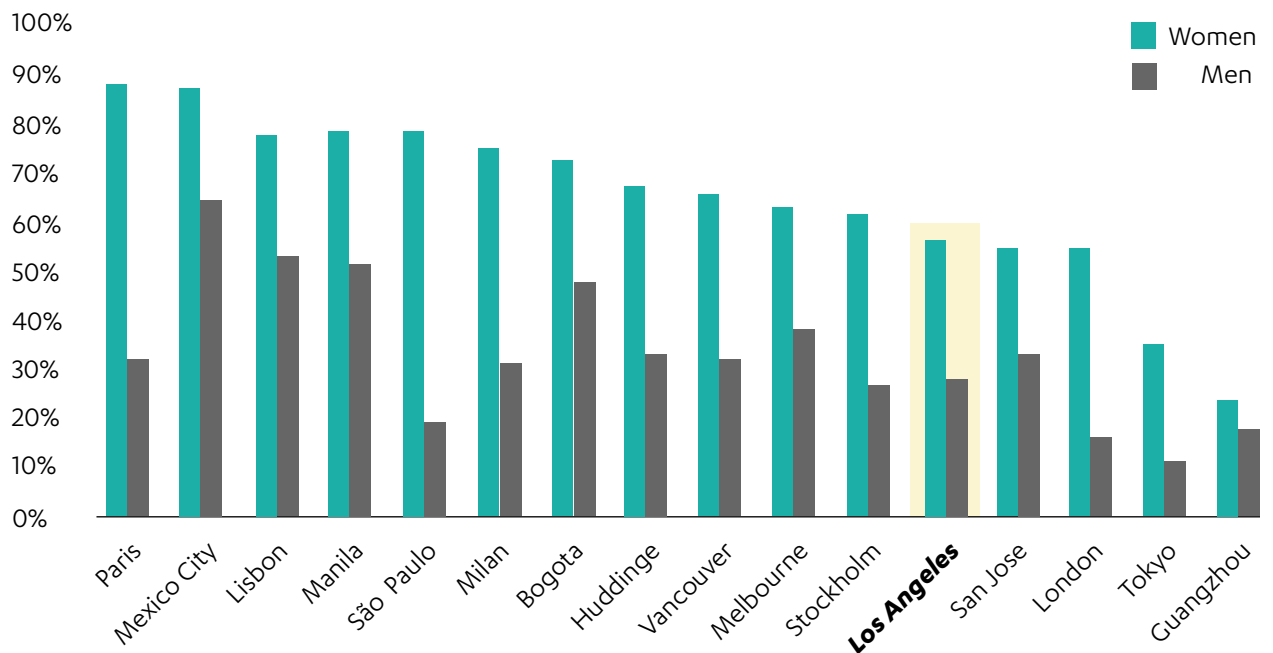
Figure 4.25
Percent of students experiencing sexual harassment on the bus system by LGBTQI status, global examples
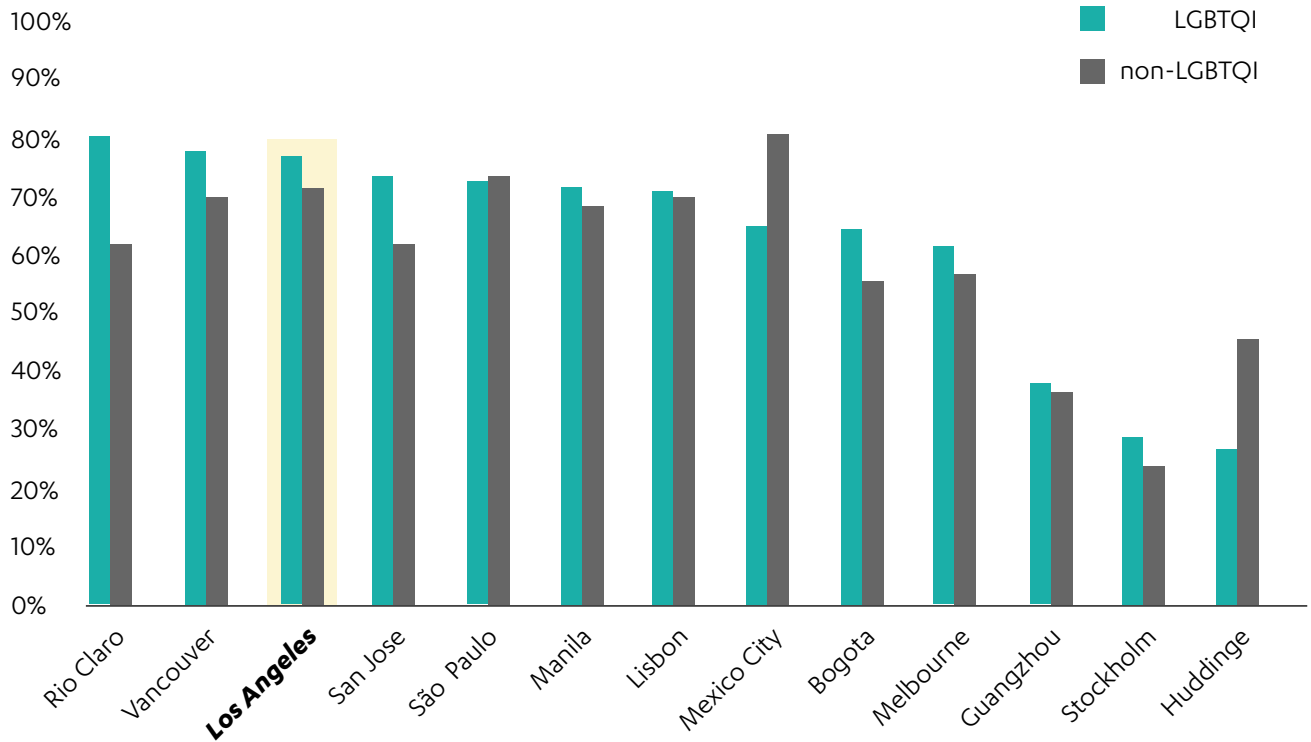
Figure 4.26
Percent of students experiencing sexual harassment on the train system by LGBTQI status, global examples

Findings
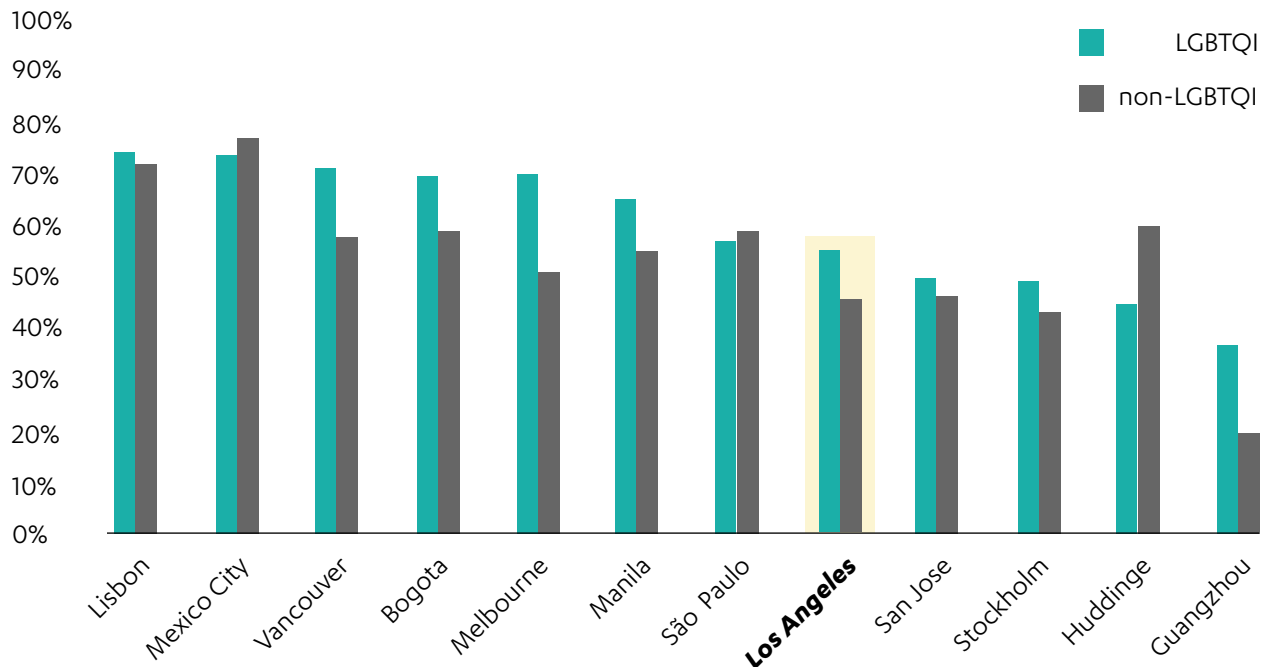
Figure 4.27 — Percent of students experiencing other serious crime while using bus transit, global examples. Bars (in descending order): Lagos ~72%, Mexico City ~33%, Bogota ~20%, São Paulo ~17%, Lisbon ~12%, Vancouver ~11%, **Los Angeles** ~11%, San Jose ~11%, Rio Claro ~10%, Melbourne ~10%, Manila ~9%, Stockholm ~9%, Guangzhou ~8%, Huddinge ~8%, Paris ~6%, Tokyo ~3%, Milan ~2%, London ~1%.
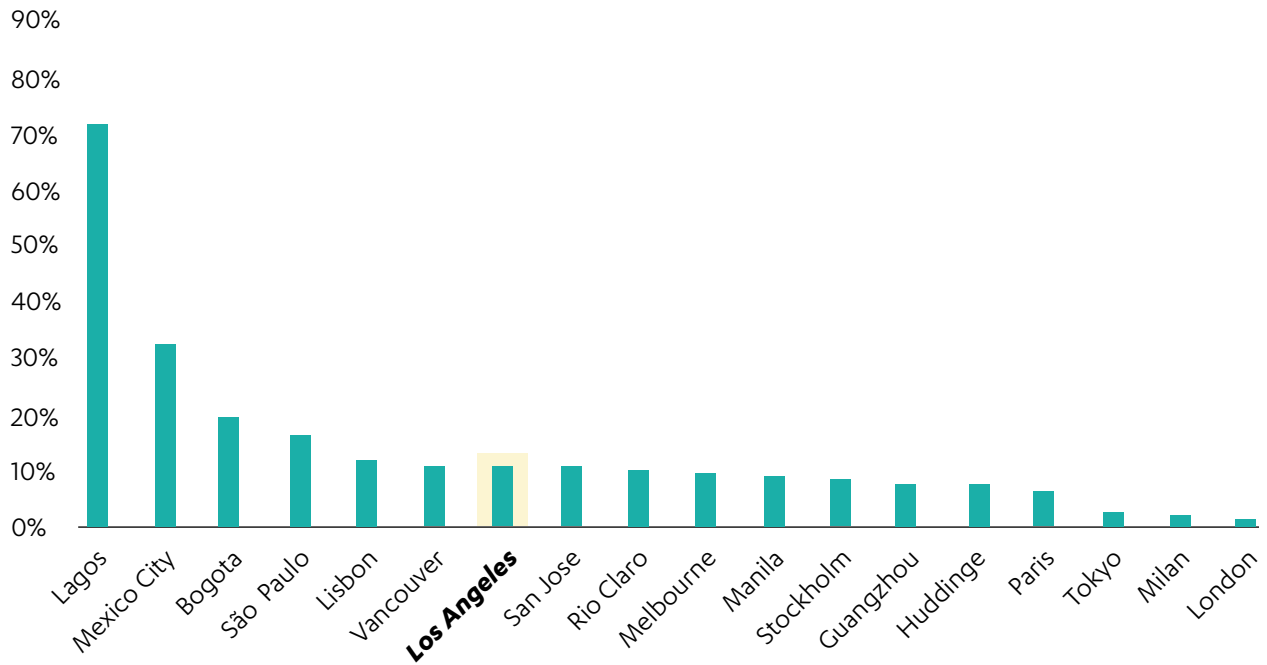
Figure 4.28 — Percent of students experiencing other serious crime while using rail transit, global examples. Bars (in descending order): Guangzhou ~68%, Lisbon ~41%, Tokyo ~36%, Milan ~36%, Paris ~33%, Vancouver ~26%, Lagos ~27%, Bogota ~26%, San Jose ~22%, Huddinge ~19%, Melbourne ~13%, Manila ~13%, São Paulo ~12%, **Los Angeles** ~10%, Stockholm ~10%, Mexico City ~9%, Rio Claro ~9%.
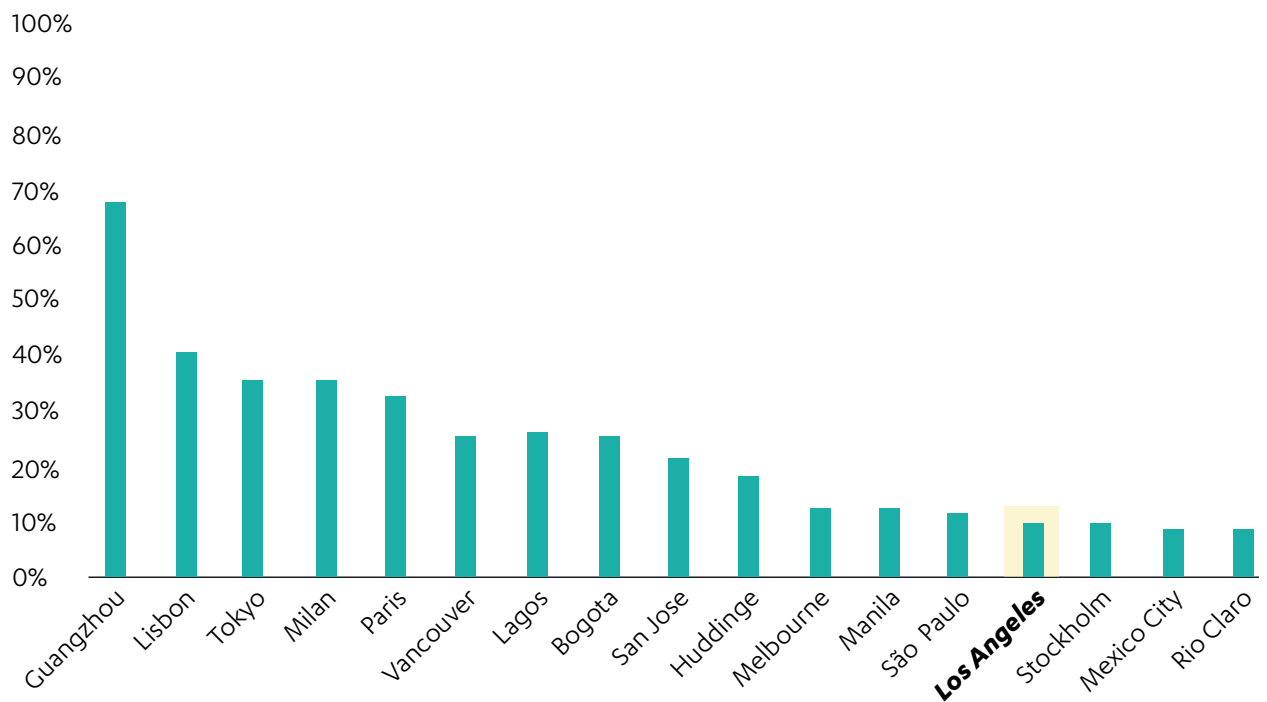
Figure 4.29
Percent of students who felt always or often safe after dark on the bus, global examples

Legend: ■ % of women ■ % of men
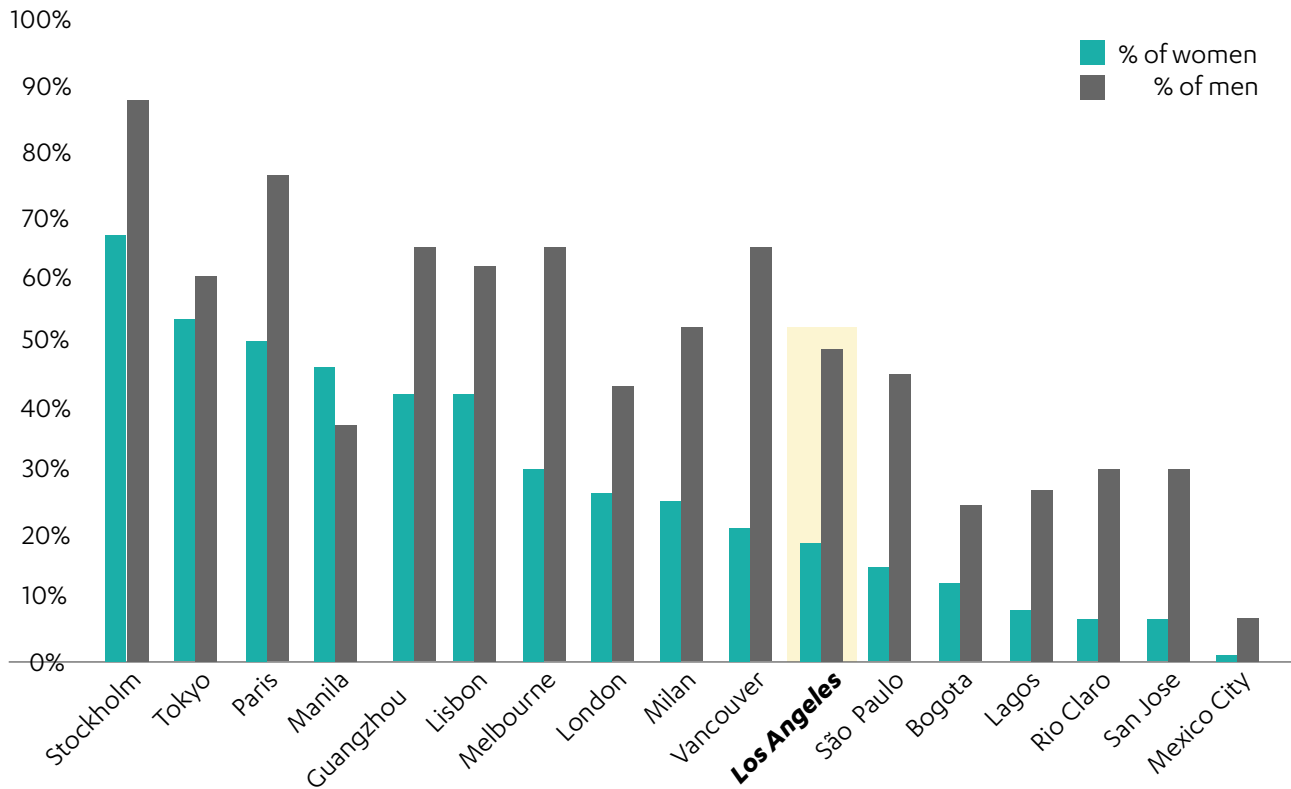
Conclusion

In conclusion, the survey of 1,284 students at the three Los Angeles-area campuses clearly showed that sexual harassment is a common incident for these students. However, certain individual characteristics, primarily gender, but also sexual orientation (LGBTQI) in certain contexts, as well as some characteristics of the physical and social environment of the setting, affected the risk of victimization. Significant numbers of primarily women students felt the need to take precautions while traveling on transit to minimize the risk of harassment, but very low numbers of victims or bystanders chose to report the harassment incidents. While this chapter focused on the perceptions of Los Angeles-area university students, the next chapter will examine how transit agencies in Los Angeles view and respond to the issue of sexual harassment on transit.

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5

**Perceptions and Responses of
Transit Agencies:
Agency Interviews**

How do transit operators perceive and deal with the problem of sexual harassment on public transit? To respond to this question, we interviewed staff from Los Angeles area transit operators to learn how they perceive the severity of sexual harassment and what, if any, preventive measures they undertake. An additional purpose of our interviews was to put potential recommendations from our study into the context of what transit agencies are currently doing.

Previous research has demonstrated a gap between passenger perceived needs and safety strategies pursued by transit operators (Taylor, et al., 2009). Most transit operators and agencies adopt gender-neutral policies, which leads to a significant mismatch between the safety and security needs of female riders and adopted strategies. As indicated earlier, a 2006 nationwide survey of 131 large transit operators in the United States found that most of these agencies did not perceive a particular need for women-focused safety programs, opting instead to address "universal needs" of transit riders (Loukaitou-Sideris and Fink, 2009).

But since the previous study was conducted 13 years ago, we wanted to examine if transit agency attitudes have changed in Los Angeles, especially in light of the context of the increased attention given to sexual harassment worldwide and declining transit ridership in the region. More specifically, we wanted to know if transit agencies in the Los Angeles area recognize the ubiquitous nature of sexual harassment both in transit environments and throughout the journey to and from transit stops and stations.

We sought to conduct interviews with five transit operators that provide service within the area where most students in the three campuses travel. We were able to interview representatives from four of these operators—LA Metro, Culver City Transit, Los Angeles Department of Transportation-DASH, and Foothill Transit— while Santa Monica's Big Blue Bus operator declined our request for an interview.

We developed a short questionnaire that asked transit staff about their perceptions regarding the extent of sexual harassment on transit, the riders' reporting patterns, and their agency's safety/security priorities and safety initiatives. Despite our survey finding, reported in Chapter 4, indicating that students experience high levels of sexual harassment during their transit trips, the interviews with transit agency staff showed that they are largely unaware of this fact, and as a result, do not perceive harassment as a major issue on their systems. Transit agencies also do not collect adequate information about sexual harassment, but rely on reporting, even when they know that sexual harassment is commonly underreported. As a result, they do not do much to combat the issue.

While some efforts are underway, these interviews revealed a major disconnect between passenger experience and agency response, as well as the asymmetry between data collection, understanding of the issue, and agency response. We expand on these themes in the rest of this chapter.

Methodology

We requested interviews with two staff members from five different transit operators providing transit service to students at UCLA, CSUN, and CSULA. Transportation agencies are large organizations with staff in differing roles. As such, we intended

to speak with staff members from both planning and operations. In some cases, we conducted these interviews separately, while in others the two staff members from the same agency joined together in one interview. Unfortunately, despite our efforts, we were unable to interview staff from Santa Monica's Big Blue Bus. Some interviews took place over the phone, while others were conducted face-to-face. Each interview took approximately 25 minutes to complete. The interview instrument is included in Appendix B.

The extent of sexual harassment

Most interviewees showed a general lack of awareness of the extent of sexual harassment in transit environments. Consequently, they did not think that sexual harassment was a major problem on their transit system. We believe this perception stems from three main issues:

1. A lack of regular onboard passenger surveys that specifically ask passengers about their sexual harassment experiences in transit settings
2. Attention only given to experiences on the transit vehicle (bus or rail) and not on the whole transit journey (bus stops, rail platforms, trip to/from the stop).
3. Reliance only on passenger reporting to understand harassment occurrence.

Except for LA Metro, transit operators do not conduct regular onboard passenger surveys. This omission leads to a lack of understanding of issues that passengers face on a regular and ongoing basis. LA Metro conducts onboard passenger surveys twice a year. Since 2015, they have added a specific question to their survey that asks: "In the past six months, while riding Metro, have you personally experienced any of the following types of sexual harassment?" listing as possible responses physical harassment, non-physical harassment, and indecent exposure. While the expansion of Metro's passenger survey to include a question about sexual harassment is certainly positive, the question directs attention only to experiences happening on the transit vehicle.

The most recent LA Metro onboard passenger survey in Spring 2019 revealed that 21% of all riders had experienced some sexual harassment while riding Metro in the past six months, and this figure increased to 25% for female riders. A LA Metro staff member familiar with this survey noted that these figures likely represent an undercount because what people define as harassment can vary from rider to rider. According to this Metro staff member:

...[It's] a little hard to tell the magnitude and importance [of harassment] overall. We do know that in terms of female riders, a large percentage of women report experiencing harassment, and we probably have an underreporting because what people define as harassment varies from person to person. We see that the majority of riders have faced harassment and whether they report it depends on the person and circumstance.

However, it is worth noting that another interviewed staff member from LA Metro did not perceive sexual harassment as a major problem in the system. This response was similar to those of interviewees from other transit agencies. These staff members had opportunities to hear about harassment incidents on their vehicles only through the limited instances of reporting. There appears to be a direct relationship between the lack of specific data about sexual harassment and the lack of perception that it constitutes a significant problem in transit systems and transit settings.

Thus, except for LA Metro, the other agencies rely on riders reporting harassment to the driver, transit agency, the police, or a dedicated hotline. However, official reports of harassment incidents are relatively few, fewer than ten per month per agency, even though each of these systems individually serves over one million unlinked passenger trips per month ("NTD Transit Agency Profiles," 2017). However, as we saw in our student survey, only 7% of students who had experienced harassment chose to report it to the authorities. Relying on reporting data alone appears to mask the magnitude of sexual harassment, making it quite invisible to transit agencies.

We conclude that most of the agency staff only consider passenger safety broadly, and not through a gender perspective. As a result, they do not clearly understand the role that sexual harassment plays in the perception of safety among transit riders, especially women. This phenomenon explains the continuing mismatch between a transit agency's understanding of rider needs and the safety needs and experiences, especially of female riders. We should note, that LA Metro's very recently published report "Understanding How Women Travel" is one of the first steps in the Los Angeles region, and among transit agencies in the United States to intentionally try to address this mismatch between perceptions and reality (Los Angeles Metropolitan Transportation Agency, 2019).

A narrow focus on on-vehicle safety

Our interviews showed that transit agencies do not typically collect information about where safety issues and sexual harassment occur on their system but mostly focus on the transit vehicle, and in very few instances on the bus stop setting. As already discussed, LA Metro's survey question about sexual harassment only asks about transit vehicle experiences. However, scholarship on transit crime, in general, shows that it is the whole journey that matters for transit riders. This complete journey includes the trip to/from the transit stop, the waiting at the bus stop or station platform, and the ride on the transit vehicle. Additionally, our student survey showed that students might experience victimization from harassment at different segments of their "whole transit journey."

However, none of the interviewees discussed or knew about harassment incidents, other than those taking place on the transit vehicle. While some discussed safety concerns at bus stops, this involved safety from traffic or concerns regarding the presence of homeless individuals. In response to such concerns, some agencies indicated that they are focusing on increasing lighting at some of their stops. For example, one agency reactively considers lighting installation

when it receives phone calls about safety concerns at particular bus stops. Another interviewee mentioned that his agency was currently considering the addition of real-time information and lighting at stops within the system.

Rider safety at night, in particular feeling safe waiting for transit at night, was the top concern, according to a 2009 study that surveyed 750 transit passengers in Los Angeles (Taylor et al., 2009). Similarly, students in our survey expressed much higher levels of fear waiting at the transit stop at night than during the day. Nevertheless, the interviews revealed that transit agencies do not proactively ask about nighttime conditions nor audit lighting conditions at bus stops.

Agency Strategies

According to the interviewees, transit agencies in the Los Angeles area are applying three strategies to address transit safety in general, and by extension, sexual harassment:

> » Operator training
> » Policing
> » Educational campaigns.

All agencies responded that they train their drivers to know how to respond to incidents of harassment, but we could not surmise what exactly operators or officers are trained to see or address or what kind of sensitivity training they receive to respond to passenger concerns. One interviewee highlighted the increased need for training front-line employees to be empathetic when they receive reports about sexual harassment.

Overall, however, the safety training for both bus drivers and law enforcement officers does not seem to directly address concerns around sexual harassment, especially verbal harassment or safety concerns that are not necessarily criminal but contribute to fear or discomfort. According to the interviewees, the staff relies on perpetrators being deterred by features like on-vehicle surveillance cameras, signage stating that activities on the vehicle are being recorded, or police officer "ride-alongs" (although this targets primarily fare evasion and not sexual harassment). One interviewee mentioned that the onus is placed on the driver to prevent anything from happening. While it makes sense for the bus driver to contribute towards passenger safety, this approach seems to overly burden the driver and erase any responsibility from the transit agency.[6]

LA Metro was the only agency interviewed that included educational campaigns as part of their strategies to combat sexual harassment. Their "It's off Limits" multi-faceted campaign began in 2015 with a system-wide ad campaign, an updated transit watch app, and a reporting hotline, run by the nonprofit "Peace Over Violence" (contracted by Metro) for the reporting of incidents. Reports are currently so low from this hotline that the nonprofit has requested information from Metro asking if signage advertising the campaign is currently posted throughout the system. Some interviewees from Metro mentioned that the agency is strongly considering

6 Our study did not include interviews with bus drivers or representatives from the Bus Driver's Union, so we do not know how they feel about this issue.

revamping this campaign, among other initiatives, which are discussed further in the next section.

Lastly, there was hardly a mention of strategies relating to crime prevention through environmental design. This is most likely because these agencies, by and large, do not consider sexual harassment as a major problem in their system, and therefore, do not see a need for design strategies to address the issue.

New Initiatives

Only the LA Metro representatives explicitly mentioned a cadre of new initiatives under consideration to address sexual harassment on their system. These seem to be largely in response to the concerns raised in the "Understanding How Women Travel" study that the agency has recently completed. This report is one of the initiatives of the LA Metro's Women and Girls Governing Council. This body works on advancing women and girls in terms of employment at LA Metro, as a service provider, and as a catalyst for economic development.

Initiatives that are underway or being considered by LA Metro to combat sexual harassment and increase safety include:

> » Revamping the "It's Off Limits" campaign, making the ads on the system more personal and featuring people rather than headlines that may depersonalize the issue (see Figure 5.1)
> » Prioritizing lighting at bus stops that currently have poor lighting conditions and are considered as unsafe.
> » Creating a standardized sexual harassment reporting protocol across all systems and providing timely response to reports of harassment.
> » Initiating a bystander campaign encouraging bystanders who witness sexual harassment incidents to report them.

None of the other agencies interviewed have initiated or had new programs in the works or other strategies to combat sexual harassment. This trend is unfortunate, yet unsurprising, given that their representatives did not perceive sexual harassment to be a major problem on their system.

Conclusion

In summary, the interviews identified:

> » A general lack of attention to women's specific safety needs
> » An overall lack of awareness from the part of the transit agencies regarding the extent of sexual harassment on public transit
> » Overreliance on reporting by victims for understanding the problem of sexual harassment in transit settings
> » A narrow focus on passenger experience on the vehicle alone, during the day
> » Reliance on operator training and standard anti-crime measures
> » Except for one agency, a lack of initiatives to combat sexual harassment

We suspect that the general ignorance about the extent of sexual harassment that takes place in transit environments is not only a characteristic of transit operators in Los Angeles. However, as we found in our survey, the risk of possible victimization from sexual harassment is a real fear among many college students, especially women. This fear leads those students who have other options to avoid transit, while some students who are captive riders feel the need to avoid traveling at night or take a series of precautions. For this reason, we believe it is important to consider a series of multi-pronged strategies, which can help tackle harassment. We turn to this topic in our final chapter.

Figure 5.1

LA Metro's current signage for the "It's off-limits" campaign

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6

Responding to Sexual Harassment on Transit:
Examples from Other Places

Introduction

To identify best practices in combatting sexual harassment, we examined initiatives undertaken by different transit agencies from around the world. We searched different transit agencies' websites, newspaper articles, social media, and the academic literature in the field to inquire about implemented strategies and their effectiveness. The different initiatives we have identified include reporting systems, campaigning and awareness-raising, transit policing, customer satisfaction surveys, safety features within the transit vehicle, station surveillance mechanisms, bystander intervention programs, and on-demand stops (dropping off passengers at their preferred locations).

Anti-Harassment Initiatives

Reporting

The most common strategy that different transit agencies have adopted is the installation of some sort of reporting system for the victims or other transit riders, who may wish to report the harassment incident. Reporting can happen through mobile applications or communicating with transit police via text messages or phone calls to a hotline or reporting line. Some transit agencies also use web-based reporting or communication via email. For example, the Washington Metropolitan Area Transit Authority (WMATA) has a web-based reporting form and an email address, where the victims can share their experience and send photos and videos (Washington Metropolitan Area Transit Authority, 2016).

Texting service/call

Often, it is difficult or uncomfortable for a transit rider to initiate a call to the police or the situation demands not calling because of safety reasons. The option of a texting service becomes helpful in that regard. Thus, WMATA has a specific address ("MyMTPD" (696873)) where riders can report an incident by texting a message or a photograph. Local advocacy groups, like Stop Street Harassment, have been assisting and collaborating with WMATA in these initiatives (Washington Metropolitan Area Transit Authority, 2016). King County, Washington and Metro Transit in Minneapolis offer a similar texting service, where anyone can report unwanted personal or sexual comments, verbal or physical behavior intended to humiliate and intimidate people, aggressive staring, insulting language, crude sexual comments or gestures, or any other crime (King County Department of Transportation, 2018; Metro Transit, n.d.). Similarly, the New York Police Department (NYPD) has a Sex Crimes Report Line for reporting harassment incidents (Stop Street Harassment, n.d.).

Internationally, Paris and Vancouver have a dedicated emergency phone number for reporting harassment. Dispatchers respond according to the extent of emergency (Gee, 2015; Metro Vancouver Transit Police, n.d.). London and Vancouver also have a texting service for reporting harassment incidents (Huusko, 2014; Metro Vancouver Transit Police, n.d.).

Communicating with mobile applications

Many transit agencies in the United States and in other parts of the world have introduced mobile apps for reporting sexual assault incidents. Some apps are not solely focused on sexual assault, but rather provide opportunities for the riders to report safety hazard issues to the police. These are usually named "See something, say something" app or "Transit Watch" app. For example, the Massachusetts Bay Transportation Authority (MBTA) has a "See Something, Say Something" app, which riders can use to send messages and photos of the assaulter to the transit police. When someone is taking a photograph using the app, the app automatically turns off the phone's flash for safety issues. These photographs help the police to investigate further the offender's identity, often using their databases and media help (Schlosser, 2013). In Vancouver, an app named "OnDuty" connects riders with all transit police channels (CBC News, 2014). Toronto Transit Commission's app "SafeTTC" has easy drop-down menus for selecting vehicle type (bus, streetcar or subway), route numbers, and station locations, and report categories of crimes (Toronto Transit Commission, 2017).

In addition to apps, Mexico City offers free Wi-Fi on the bus so that people can connect to the apps. The app demonstrates types of abuses to increase people's awareness and motivate them to report. MBTA hangs posters in trains and buses with QR codes, which riders can download and connect to the "See Something, Say Something" app (Schlosser, 2013).

Educational and Awareness Raising Campaigns

Educational campaigns and knowledge dissemination represent another form of intervention. Campaigns alert would-be offenders about the consequences of crime and inform that everyone has the right to travel safely and comfortably (Figure 6.1). However, if people do not know about the reporting system or how to use the system, the effort behind an initiative would not bring fruitful results. For this reason, transit agencies over the world are emphasizing mass campaigning and awareness-raising. WMATA has advertisements on its vehicles and stations depicting public reporting and encouraging riders to report and intervene in the case of an assault incident. The agency has partnered with the nonprofit Stop Street Harassment and Collective Action for Safe Spaces (CASS) for these advertisements (Patrick, 2018).

The campaigns usually have messages about combating harassment in transit. WMATA features the message "You can help STOP harassment" (Figure 6.2), focusing on bystanders and motivating them to report harassment incidents they are witnessing (Franklin and Aubert, 2019). In Vancouver, a poster campaign was launched in 2016 that said: "Unwanted touching is a crime. Keep your hands to yourself." Eighty posters were hung up in SkyTrain cars for two months in 2016 (Boothby, 2018). The Metropolitan Transportation Authority (MTA) in New York disseminates brochures at transit stations. The NYPD has "The Call is Yours" campaign that encourages people to report incidents (Metropolitan Transportation Authority, n.d.). The Toronto Transit Commission (TTC) launched the "This is Where..." campaign in 2017 to address harassment based on gender identity, ability, and race (Toronto Transit Commission, 2017).

Figure 6.1

Posters from Vancouver's campaign against sexual assault
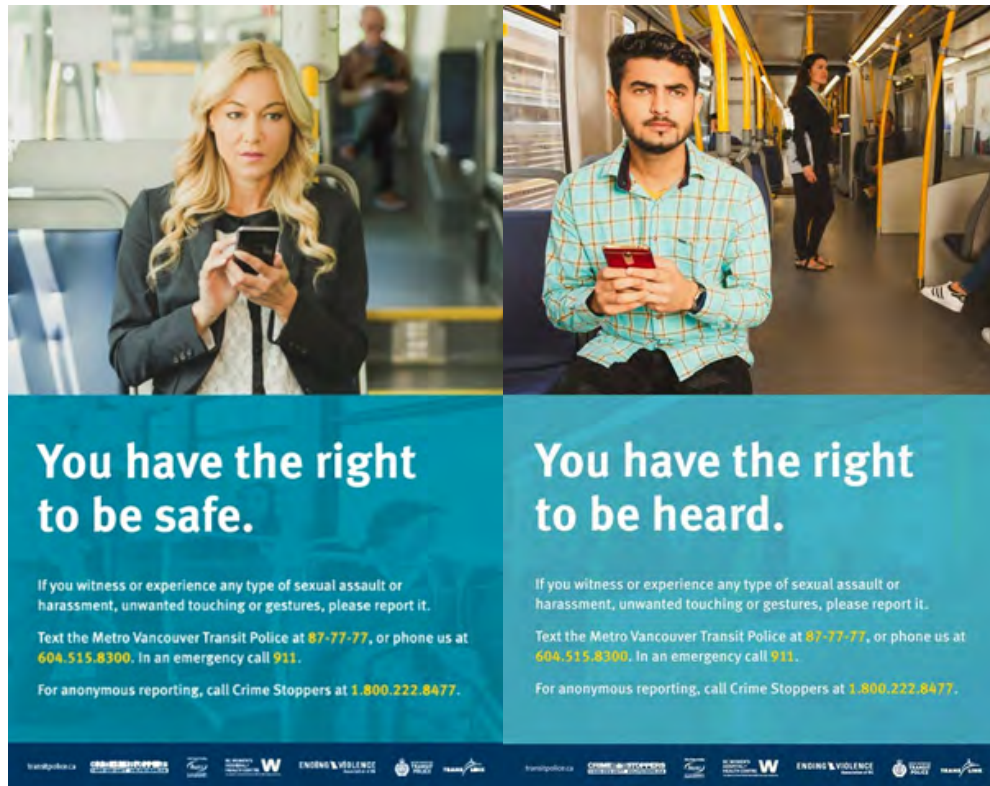
King County in Washington uses the tagline 'Report it to Stop it' for its campaign (Figure 6.3), while Chicago Transit Authority has the tagline "If it's unwanted, it's harassment." King County's campaign has achieved great success tripling the number of reporting and increasing the number of arrests of the offenders (King County Department of Transportation, 2019). The MBTA has launched campaigns focusing on the harassment faced by people with disabilities (Figure 6.4), who are victimized at higher rates than individuals without disabilities (Massachusetts Bay Transportation Authority, 2016).

In France, in addition to disseminating flyers and posters, the government encourages people to share their experiences on social media. This push has resulted in a huge increase in social media posts about sexual assault experiences with the hashtag ##HarcèlementAgissons, which means: "Act now against harassment." The government uses the tagline "Stop - That's Enough!" for its awareness campaign (Gee, 2015). London's "Report It To Stop It" campaign has increased the number of reporting by 65 percent and has led to the arrest of more than a thousand offenders (Ibrahim, 2017).

WMATA's campaign featuring the message *"You can help STOP harassment"*

King County's campaign against sexual assault

Figure 6.4

MBTA's campaign focusing on people with disabilities

Mexico City has taken a more radical approach to making men aware of the discomfort women experience in the subway. In collaboration with the United Nations, the city's government has changed a seat's appearance in a subway car to depict the lower half of a male's body, including the genital organ. The floor in front of the seat states: "It is annoying to travel this way, but not compared to the sexual violence women suffer in their daily commutes." Another campaign named "Experimento Pantallas"—or "experiment screens" by UN Women and the Mexican government was launched with flyers and videos showing men giving lewd looks and having slogans such as: "This is how your mother gets looked at every day" (Deb and Franco, 2017; Hadley, 2017). Transport for London launched a campaign named "Report It To Stop It" in 2015 where a video is telecast showing unwanted sexual behavior that women experience in the Tube. This strategy increased the number of reports and resulted in several arrests (Midgley, 2015).

Policing

Dedicated transit police deal with the issues of harassment in many regions. Vancouver has transit police officers, who respond to harassment and other safety issues when a rider contacts them via text message or app. The "OnDuty" mobile app connects all transit police channels into one single platform (CBC News, 2014). There are often training programs about security issues for police and front-line employees. WMATA is one transit agency that has enhanced its training programs for transit police (Washington Metropolitan Area Transit Authority, 2016).

Transit authorities in other countries also deploy police and security personnel in plain clothes. As a part of London's Project Guardian in 2014, sixteen sexual offenders were arrested by plainclothes and uniformed police officers (Huusko, 2014). Paris also has similar initiatives. India started a martial arts training program for its all-female police squad to combat and arrest offenders, known as Operation Kali. The metro system in Kolkata, India has started a female-only staff project at Netaji Bhavan metro station, with women in every post from management to fare

collection, to policing and maintenance. The initiative was triggered by the idea that women feel safer and more comfortable to communicate with other women (Javed, 2018).

Passengers Surveys

Some transit agencies conduct passenger surveys, which ask about sexual harassment. WMATA released a report about their survey findings concerning sexual assault in 2016. The survey attempted to identify passengers' experience in transit and incidents of sexual harassment, the effectiveness of the agency's outreach programs, and passengers' awareness about the reporting process and different campaign programs (Washington Metropolitan Area Transit Authority, 2016). The Metro Transit Police Department in Minnesota has also included questions in their customer survey about harassment and reporting.

Safety Features and Equipment within the Vehicle

Many transit agencies have installed in-vehicle equipment as safety measures for passengers. Vancouver has intercom and silent alarm in its SkyTrain, which passengers can use for communicating with the operator. The silent alarm is a yellow strip located on every window, which the passengers can press in case of an emergency. An attendant trained to provide customer service and emergency response arrives to investigate the situation as soon as possible. There are speakerphones in the vehicles, which the operator can activate to listen to conversations if any situation arises. Passengers can also use the speakerphones to contact the operator. The buses of Coast Mountain Bus Company in Vancouver have an onboard communication system, which the drivers can use to connect to a contact point 24/7 in case of any security issue (Translink, 2014).

Trains in Chicago are equipped with a passenger intercom in every rail car, which passengers can use to talk to the operator (Chicago Transit Authority, n.d.). In Mexico City, voice messages, like "no sexual abuse will be tolerated," are aired in buses with loudspeakers to alert assaulters and also motivate bystanders to report incidents (Arana, 2015).

Station Surveillance

Surveillance with video monitors is a very common approach undertaken by transit authorities in stations to identify unsafe areas, investigate crime, protect riders, monitor hots spot zones for crime and respond to system emergencies. For example, Vancouver has a closed-circuit television cameras (CCTV) in platforms, elevators, escalators and ticket concourse areas. The SkyTrain platforms in Vancouver also have in-station emergency cabinets. These cabinets have emergency train stop buttons and a red emergency telephone. The telephone can be used to communicate directly with the SkyTrain control operator and ask for emergency assistance (Seeber, 2019). In 2011, rail stations operated by 40 transit agencies in the United States had some sort of video surveillance of station platforms, shelters, and other station areas. The number has increased since then with the upgrading of older stations, the inception of new transit agencies and the opening of new stations (Schulz and Gilbert, 2011).

Bystander intervention program

In the case of harassment incidents, bystanders can play a very important role by intervening and helping fellow passengers. Depending on the situation, bystanders can take five type of actions:

> » **D**irect (e.g. confronting the harasser),
> » **D**istract (e.g. interrupting by asking questions),
> » **D**elegate (e.g. finding a third party to intervene),
> » **D**elay (e.g. following up with the assaulted person later) and
> » **D**ocument (e.g. recording an incident or noting details) (Hollaback!, n.d.).

WMATA's campaign featuring the message *"You can help STOP harassment,"* where *STOP* refers to four actions bystanders can take:

> » **S**idetrack (distracting the assaulter by asking questions or interacting with the victim),
> » **T**ell (reporting the incident to Metro),
> » **O**bserve (taking notes about the assault for reporting to Metro) and
> » **P**ostpone (following up with the assaulted person later).

Metro Vancouver buses and trains have posters and advertisements in the vehicles for encouraging bystanders to intervene (Wadhwani, 2018). The Chicago Transit Authority's campaign urges bystanders to contact transit authority personnel, if they see any incident (Chicago Transit Authority, n.d.). The York Region Transit designed its posters in 2015 for bystander intervention, depicting how a bystander feels during a harassment incident (Figure 6.5) (Megginson, 2015).

Figure 6.5
York Region Transit: Poster for bystanders
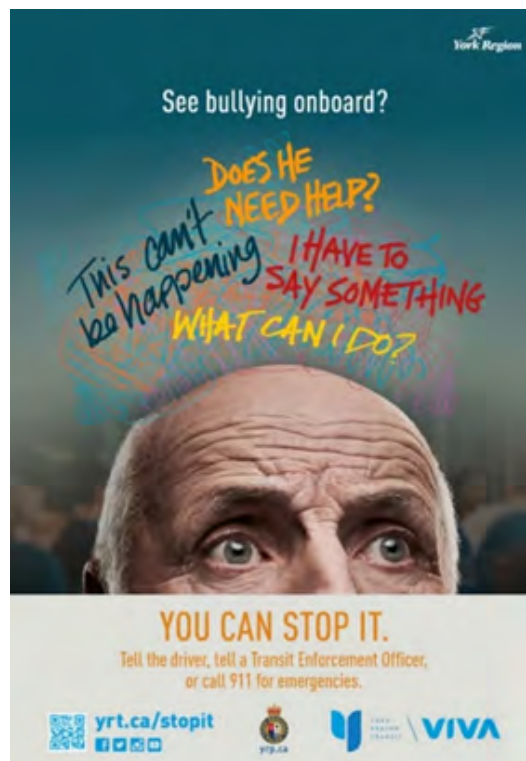
Request-a-Stop

In some transit systems, passengers can request a stop or drop-off in a place other than designated stops during nighttime, if they feel unsafe. Vancouver's transit system offers such service on its buses with the exception of the express or limited-stop portions of a transit route (Wadhwani, 2018). Paris has also been offering this service in ten bus lines since February 2018 (Scotti, 2018). Toronto has had a women's request-a-stop program for nighttime service in place since the early 1990's. The program was so successful that in 2011, Toronto expanded the effort allowing any passengers traveling alone to request a stop between 9:00 pm and 5:00 am. (Toronto Transportation Commission, n.d).

Conclusion

In summary, we have found that several transit agencies in the US and overseas have initiated harassment reporting systems and anti-harassment educational campaign programs. Campaign messages that encourage reporting and bystander intervention have the potential to increase the number of reporting. Customer satisfaction surveys at regular intervals are also necessary to assess the extent of harassment and the effectiveness of the anti-harassment programs undertaken. In some cities, like Mexico City and Kolkata, where the problem is more severe, transit agencies have undertaken radical and innovative initiatives, as described earlier. Based on the frequency and reporting of incidents, pilot programs with innovative initiatives can be helpful at transit vehicles on certain routes. People with different gender, race, ethnicity, and disability status have different needs and experiences, which need to be addressed by the initiatives. Organizing the initiatives and the entire system in a more comprehensive way, and using multi-prong strategies that include policing, educational campaigns, security and digital technologies is critical and may lead to better success than proceeding in a piecemeal approach.

However, while we identified many responses to harassment by transit agencies, we have not found any systematic evaluation of particular responses or any metric with which transit agencies can evaluate the effectiveness of their anti-harassment initiatives. This finding may be because many agencies are still at a rudimentary stage of figuring out strategies, and it has not been long since they started acknowledging sexual harassment as a major issue.

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7

Addressing Harassment in Transit: Policy Recommendations and Conclusions

Sexual harassment is a common but highly underreported occurrence in transit environments, which disproportionately affects some subgroups of students. As we saw in Chapter 4, both female and male students had similar suggestions for measures to address harassment, asking for more frequent transit service (to minimize long exposures at bus stops and train platforms), better lighting at transit stops, installation of security cameras and digital timetables at certain bus stops, and police/security patrolling of transit settings. On the other hand, women-only buses or train wagons—common in some countries—were not popular among students.

Listening to student suggestions can be one of the first steps that transit operators can take to ease perceptions of fear and counteract the prevalence of harassment. However, to tackle a phenomenon as pervasive as sexual harassment in transit environments, we need multi-pronged strategies that would include research, design, and policy action.

In terms of research, we need to develop meticulous data collection methods that can help us understand what types of harassment take place at which types of transit settings and who is affected. Our interviews revealed that with few exceptions, most transit operators do not survey their passengers about their experiences with sexual harassment. Even when surveying takes place, questions are typically limited to on-vehicle experiences, do not inquire about factors along the whole transit journey, or about the time of day when harassment incidents take place.

As this study showed, to address sexual harassment we must better understand how harassment may affect differently different subgroups of transit riders, and how characteristics such as age, race/ethnicity, sexual orientation, disability may interact with gender to increase the risk of harassment. Studies about sexual harassment examine women as victims and men as perpetrators, since this is true for the majority of incidents. However, almost one-third of male students also reported victimization from verbal harassment. More research is necessary to understand the characteristics of harassment against male victims, and who are the offenders in such circumstances. Future research should also go beyond the simple women/men binary and examine how harassment affects gender non-conforming and transgender people. To do this, researchers must intentionally seek out and engage with transgender and gender non-conforming transit riders as some scholars are beginning to do (Lubitow, et. al., 2020).

Lastly, in addition to hearing directly from transit riders themselves, researchers should interact with practitioners, and involve transit agencies with their research. Researcher-practitioner collaborations would help make research on women's issues in transportation more accessible to transportation professionals and will also give researchers better insights on the outcomes of particular policies and initiatives for passenger safety undertaken by transit agencies.

In terms of physical environment characteristics, the regression models showed that certain characteristics might enhance or decrease the possibilities of harassment and student perceptions of safety in transit settings. For example,

desolate bus stops increased students' fear, while the lack of adequate lighting at transit settings was linked to more harassment incidents. Crime Prevention through Environmental Design (CPTED) strategies that have been shown to have positive impacts in transit crime reduction (Cozens and Love, 2015) may help deter sexual harassment offenders. For example, placing bus stops near people and activities better allows for natural surveillance (Loukaitou-Sideris, 1999), and the addition of lighting at dark bus stops and CCTV cameras at station platforms would not only help increase visibility but also lessen the fear of some transit riders. Additionally, installing digital timetables at some bus stops, a common feature of rail stations, would ease rider anxiety, especially at night (Yoh et. al, 2011).

The regression models also showed that certain characteristics of the social environment, such as the presence of drunk individuals and drug use/drug sales at transit stops, may increase the incidence of sexual harassment. Employing more security patrols in these problematic locations would be helpful. However, we should also underscore the tension between increasing policing and issues related to systemic discrimination against certain racial/ethnic groups in the criminal justice system. While some students explicitly asked for more police, others emphasized that "more cops is not the answer" and preferred more security in the form of highly-visible agency staff. In general, respondents not only wished for more security but also wanted security to be better allocated and targeted. As some students wrote:

"Sometimes there are securities [sic] or police officers on the bus/ trains/ platforms but they are not circulating the area. That's my concern."

"I don't believe the police should be in buses for protection, but there should be like a safety task force riding in buses to help with any conflict."

A series of policies can help make the incidence of sexual harassment in transit environments more visible to the larger public and public agencies. As discussed in Chapter 6, several transit agencies in different parts of the world are initiating educational campaigns that train and encourage bystanders to respond to and report harassment incidents, as well as public outreach campaigns in social and print media and signs and posters on buses, trains, and transit stops. Additionally, educational campaigns at high schools and colleges can tout how sexual harassment is an offense and also encourage bystanders and victims to report it. Transit operators and police agencies should also find ways to make reporting easier. Additionally, they should ensure that staff receiving harassment reports is properly trained on how to respond compassionately, as this study found many students did not choose to report a harassment incident because of embarrassment.

Being able to report harassment incidents quickly and easily through a dedicated text-to-police line in real time (as the incident is happening) might help increase the currently very low numbers of reported incidents, and even help catch the offenders. As suggested by a student:

"I think there should be a number that can be texted when there is a problem .... Especially on trains, no one is going to use the intercom - it's too public and people are too afraid."

Transit operators may also increase the training of their staff and vehicle drivers so that they know how to respond when/if they become aware of harassment incidents.

Increasing transit frequency and reliability will minimize the time that a rider has to wait at a bus stop or train platform, reducing the risk of harassment. Several student comments alluded to this fact:

> *"We need more buses after 8 pm so we don't need to wait 45min in the dark with no light."*
>
> *"Increased frequency and reliability of services would increase security greatly."*
>
> *"I just wished the buses would come more often so I wouldn't have to wait by myself for 20 minutes."*

Apart from improving the reliability of transit services, digital technologies and real-time transit arrival apps showing reliable real-time arrival information, can help riders plan their trip to avoid long waits (and harassment exposure) at the transit stop. For example, newly introduced "transit features" in the Google Maps app give passengers information about, among other things, "Security Onboard," namely, if transit vehicles are monitored by security cameras or security guards or have a helpline for passengers (Glasgow 2020).

Since groping and other physical harassment behaviors take place primarily in overcrowded transit vehicles, policies that help reduce overcrowding (such as adding more transit vehicles and vehicles of higher capacities during peak hours) will also help reduce groping and other incidents of physical harassment.

As the study showed, fear of sexual harassment increases after dark. A number of transit agencies have instigated request-a-stop policies that allow riders to disembark at night from the transit vehicle at places that may be closer to their destination than bus stops. Such policies help minimize the "last-mile" walk, thus decreasing opportunities for harassment during this walk.

Certainly, transit operators, scholars, or planners alone cannot end the occurrence of sexual harassment. Importantly, some changes also need to happen in the criminal justice system, so that penal codes encompass the full cadre of sexual harassment behaviors as criminal offenses and define appropriate penalties for each. Finally, parents and teachers should tout to their children and students from an early age the importance of respect towards the other gender. As one student added at the end of her questionnaire: *"I think there generally needs to be more emphasis on teaching how to respect others in public space."*

In the end, we all need to recognize that sexual harassment is a phenomenon that affects and hurts many people, limiting their mobility and increasing their fear. A one-size-fits-all strategy cannot be effective; rather, concerted efforts by different parties employing research, design, policy, technology and outreach, as shown in Table 7.1, can help tackle and diminish sexual harassment from transit and public settings. These strategies, in combination, will no doubt make the travel of different groups and their access to opportunities around the city safer and more pleasurable.

Strategy	Type	Responsible Actor	Objective
Empirical studies	Research	Scholars	Understand harassment patterns
Passenger Surveys	Research	Transit operators	Understand harassment patterns
CPTED strategies » Lighting » Street upkeep » Bus stop placement » Elimination of nooks & corners	Design	Municipal depts. Transit operators	Crime prevention through design
CCTV cameras	Technology	Bureau of street services	Increase visibility
Digital Apps/ harassment hotline	Technology	Technology company Transit police	Make reporting easier
Digital timetables at bus stops	Technology	Transit operators	Minimize passenger wait/exposure
Security patrolling	Policing	Transit police	Crime prevention
Increasing reliability of bus service	Policy	Transit operators	Minimize passenger wait/exposure
Addition of more high capacity vehi-cles at rush hour	Policy	Transit operators	Minimize overcrowding
On-demand stops	Policy	Transit operators	Minimize passenger wait/exposure
Education campaign	Outreach	Transit operators/ municipal agencies/schools	Educate about harassment; encourage reporting
Modification of penal code	Policy	Criminal justice system; Legislature	Penalize harassers

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Data Management Plan

Products of Research

This project collected original data from university students at three Los Angeles campuses. The questionnare was coded into a series of variables Each research team from the global study collected their own data and were not made available to the UCLA research team.

Data Format and Content

The survey data was exported as a .csv file and a .dta file was created for variable coding and analysis in STATA.

Data Access and Sharing

Per this project's exempted status approval from the UCLA Institutional Review Board (#18-000387) the data collected from this study can only be made available to the approved research team for use in this study or further analysis.

Appendices

Appendix A
Survey Instrument and Top Line Results

TOP LINE RESULTS – All Campuses n=1284

1. On a typical weekday, how long do you estimate is your trip to the university from door-to-door?

	All	Women	Men
More than 2 hours	8%	10%	6%
Between 1 hour to 2 hours	39%	40%	35%
Between half an hour and 1 hour	34%	31%	40%
Between 15 to 30 minutes	15%	15%	14%
Less than 15 minutes	4%	4%	5%

BUS TRAVEL
2. On a typical week, how often do you use **a bus**?

   Please do not include buses or vans owned/operated by your university.

	All	Women	Men
Everyday	19%	20%	16%
5-6 days per week	38%	38%	40%
3-4 days	27%	26%	29%
1-2 days per week	8%	8%	7%
Less than once per week	4%	4%	5%
Never (SKIP to TRAIN travel section)	4%	4%	4%

3. Do you feel safe when using the bus during daytime?

	All	Women	Men
Always	32%	26%	45%
Often	47%	47%	44%
Sometimes	18%	23%	9%
Rarely	2%	3%	1%
Never	1%	1%	1%

4. Do you feel safe waiting at the bus stop during daytime?

	All	Women	Men
Always	33%	28%	45%
Often	44%	44%	43%
Sometimes	19%	23%	10%
Rarely	3%	4%	1%
Never	1%	1%	0%

5. Do you feel safe when using the bus after dark?

	All	Women	Men
Always	8%	4%	15%
Often	21%	15%	34%
Sometimes	36%	37%	33%
Rarely	16%	20%	7%
Never	10%	14%	2%
I don't use the bus after dark	9%	10%	8%

6. Do you feel safe walking to or waiting at the bus stop after dark?

	All	Women	Men
Always	5%	2%	12%
Often	19%	13%	32%
Sometimes	36%	34%	40%
Rarely	24%	30%	11%
Never	16%	21%	6%

7. Do any of the following prevent you from using the bus more often? (Mark all that apply)

	All Students	Women	Men
Slow journey times	46%	46%	47%
Unreliable or infrequent bus service	42%	41%	46%
Antisocial behavior of others (drinking, cursing, smell)	39%	44%	31%
Overcrowded services	35%	35%	34%
Fear of victimization while waiting for the bus:	25%	34%	8%
Dirty environment on bus	25%	26%	22%
Many transfers	23%	22%	25%
Sexual harassment on the bus	23%	33%	2%
Fear of victimization while on the bus	19%	23%	9%
Lack of info about bus schedules; lack of digital schedule or time showing arrival	17%	17%	17%
Dirty environment during walk to the bus stop	16%	19%	11%
Ticket cost	9%	9%	7%
Fear of crashes	5%	6%	3%
Fear of terrorism	5%	5%	4%

8. Which of the following do you perceive as being a significant problem on the bus and at the bus stops you are using? (Please mark all that apply)

<u>At the bus stop</u>

	All Students	Women	Men
Poorly illuminated	52%	57%	44%
Vandalism	50%	52%	47%
Drunk people	47%	52%	39%
Poorly guarded/empty most of the day	41%	46%	32%
Verbal/physical threats	38%	46%	25%
Isolated	38%	44%	26%
Obscene language	37%	42%	29%
Sexual harassment	34%	45%	14%
Drug use/sales	31%	34%	27%
Panhandling	31%	35%	24%
Robbery	28%	34%	17%
Invade personal space[1]	27%	34%	12%
Violent crime	26%	31%	17%
Jewelry snatching	22%	26%	14%
Pickpocketing	21%	24%	14%

<u>On the bus</u>

	All Students	Women	Men
Drunk people	49%	52%	44%
Obscene language	45%	50%	38%
Verbal/physical threats	41%	45%	33%
Vandalism	40%	42%	38%
Sexual harassment	34%	42%	18%
Pickpocketing	22%	25%	15%
Drug use/sales	21%	23%	16%
Panhandling	19%	20%	16%
Robbery	18%	21%	11%
Poorly guarded/empty most of the day	16%	17%	13%
Violent crime	16%	19%	9%
Jewelry snatching	14%	16%	10%
Poorly illuminated	10%	13%	6%
Isolated	9%	11%	6%

9. In the last 3 years have you experienced any of the following while traveling on, heading to, or waiting for the bus (please mark all that apply) (random)?

On the bus

Type of sexual harassment/assault	All Students	Women	Men
Using obscene/abusive language	42%	46%	34%
Unwanted sexual looks or gestures	24%	35%	5%
Calling you babe, honey, sweetheart	19%	27%	3%
Sexual comments (about clothing, looks)	18%	25%	5%
Unwanted sexual teasing, remarks	12%	18%	2%
Indecent exposure	12%	13%	12%
Whistling	11%	14%	5%
Making kissing sounds	11%	15%	2%
Stalking	9%	12%	3%
Asking you personal questions about sexual life	8%	10%	5%
Groping, touching inappropriately	8%	11%	3%
Masturbating in public	8%	10%	4%
Pulling or playing with your hair	6%	8%	2%
Showing pornographic images	4%	4%	3%
Asked to have sex by a stranger	3%	5%	1%
Unwanted kissing by a stranger	1%	2%	1%

To/From the bus stop

Type of sexual harassment/assault	All Students	Women	Men
Whistling	24%	35%	3%
Calling you babe, honey, sweetheart	21%	31%	3%
Using obscene/abusive language	21%	25%	13%
Unwanted sexual looks or gestures	21%	30%	4%
Sexual comments	17%	26%	1%
Stalking	16%	22%	5%
Making kissing sounds	16%	23%	1%
Unwanted sexual teasing, remarks	13%	19%	1%
Indecent exposure	10%	11%	7%
Masturbating in public	5%	6%	2%
Asking you personal questions about sexual life	5%	7%	1%
Asked to have sex by a stranger	3%	5%	1%
Groping, touching inappropriately	2%	2%	1%
Unwanted kissing by a stranger	2%	2%	0%
Pulling or playing with your hair	1%	1%	1%
Showing pornographic images	1%	1%	0%

<u>At the bus stop</u>

Type of sexual harassment/assault	All Students	Women	Men
Using obscene/abusive language	34%	38%	26%
Whistling	25%	35%	7%
Unwanted sexual looks or gestures	25%	36%	4%
Calling you babe, honey, sweetheart	22%	33%	2%
Sexual comments (about clothing, looks)	19%	28%	4%
Making kissing sounds	15%	22%	2%
Unwanted sexual teasing, remarks	14%	20%	2%
Indecent exposure	14%	16%	9%
Stalking	12%	17%	4%
Asking you personal questions about sexual life	7%	9%	3%
Masturbating in public	6%	8%	1%
Asked to have sex by a stranger	4%	5%	2%
Groping, touching inappropriately	4%	4%	2%
Pulling or playing with your hair	2%	3%	2%
Showing pornographic images	2%	2%	2%
Unwanted kissing by a stranger	2%	2%	1%

10. Do you feel necessary to take any precautions against crime when using public buses?

	All students	Women	Men
Yes	81%	86%	72%
No (SKIP to question 12)	19%	14%	28%

11. Which of the following precautions do you take? (mark all that apply)
    (random)

	All Students	Women	Men
Travelling only during daytime	45%	52%	33%
Waiting for transit only at well-lit places	42%	51%	0%
Dressing a certain way	40%	53%	14%
Avoiding carrying purses, wallets, holding them close to you[7]	38%	44%	0%
Sitting close to the driver	38%	45%	0%
Avoiding particular bus stops	33%	38%	25%
Carrying some thing as a weapon[8]	28%	33%	15%
Not wearing jewelry	26%	29%	0%
Waiting for transit only if other people are around	25%	31%	16%
Avoiding particular bus lines	18%	18%	16%
Always travelling with someone else	14%	17%	8%

12. Please select **the three most important** options from the list below that, in
    your view, can make traveling by bus safer.

	All students	Women	Men
More lighting at bus stops	51%	53%	48%
More frequent bus service[9]	39%	40%	40%
Police patrolling bus stops	39%	40%	38%
Digital timetable at bus stops	37%	36%	41%
Cameras (CCTV) at bus stops	35%	38%	33%
Cameras (CCTV) on the bus	33%	36%	29%
More police officers patrolling buses	31%	32%	31%
Direct police line at bus stop	24%	26%	21%
Direct police line in the bus	16%	18%	15%
Anti-harassment campaigns/signs	10%	11%	8%
"Women only" buses	10%	12%	4%

TRAVEL BY TRAIN (subway or light rail)

13. On a typical week, how often do you use the train?

	All students	Women	Men
Everyday	6%	20%	4%
5-6 days per week	12%	17%	12%
3-4 days	12%	11%	12%
1-2 days per week	10%	9%	10%
Less than once per week	22%	19%	22%
Never (Skip to REPORTING)	39%	34%	41%

14. Do you feel safe when using the train during daytime?

	All students	Women	Men
Always	27%	21%	40%
Often	45%	44%	45%
Sometimes	22%	27%	12%
Rarely	5%	6%	2%
Never	2%	2%	0%

15. Do you feel safe waiting on the train platform during daytime?

	All students	Women	Men
Always	27%	22%	41%
Often	44%	43%	44%
Sometimes	22%	26%	12%
Rarely	5%	7%	2%
Never	2%	2%	1%

16. Do you feel safe using the train after dark?

	All Students	Women	Men
Always	5%	2%	10%
Often	17%	12%	30%
Sometimes	35%	31%	41%
Rarely	22%	27%	11%
Never	21%	28%	7%

17. Do you feel safe walking to or waiting on the train platform after dark?

	All Students	Women	Men
Always	7%	4%	15%
Often	23%	16%	40%
Sometimes	36%	38%	32%
Rarely	19%	24%	9%
Never	14%	20%	4%

18. Which of the following prevent you from using the train more often (mark all that apply)

	All Students	Women	Men
Antisocial behavior of others (drinking, cursing, smell)	33%	35%	28%
Dirty environment on subway	28%	29%	28%
Overcrowded services	27%	28%	24%
Fear of victimization while on the subway	23%	30%	8%
Sexual harassment on the subway	22%	31%	2%
Slow journey times	20%	20%	21%
Fear of victimization while waiting for the subway	19%	25%	8%
Fear of victimization while walking to the subway[10]	19%	26%	6%
Dirty environment during walk to the subway station[5]	19%	21%	15%
Unreliable or infrequent subway service	19%	18%	20%
Many transfers	15%	15%	15%
Lack of info about bus schedules; lack of digital schedule or time showing arrival	12%	13%	10%
Ticket cost	9%	10%	7%
Fear of crashes	9%	10%	6%
Fear of terrorism	8%	11%	2%

19. Which of the following do you perceive as being a significant problem on the train and at the platform you are using (please mark all that apply):

On the train

	All students	Women	Men
Drunk people	49%	51%	43%
Vandalism	39%	41%	35%
Obscene language	38%	43%	29%
Verbal/physical threats	34%	37%	26%
Sexual harassment	31%	39%	16%
Panhandling	26%	27%	24%
Poorly guarded/empty most of the day	25%	29%	17%
Drug use/sales	25%	27%	17%
Robbery	19%	23%	9%
Pickpocketing	18%	21%	13%
Violent crime	17%	19%	12%
Jewelry snatching	14%	17%	7%
Design	14%	14%	14%
Poorly illuminated	12%	13%	8%

At the platform

	All students	Women	Men
Drunk people	44%	46%	41%
Vandalism	36%	38%	31%
Obscene language	34%	39%	25%
Poorly guarded/empty most of the day	32%	36%	23%
Verbal/physical threats	32%	36%	22%
Sexual harassment	28%	35%	12%
Drug use/sales	27%	31%	20%
Poorly illuminated	27%	30%	20%
Panhandling	23%	25%	20%
Robbery	22%	25%	14%
Violent crime	21%	25%	12%
Pickpocketing	19%	23%	12%
Jewelry snatching	17%	20%	9%
Design	17%	16%	19%

20. In the last 3 years have you experienced any of the following while travelling on the train, heading to the station, or waiting at a platform (please mark all that apply) (random)?

On the train

	All Students	Women	Men
Using obscene/abusive language	26%	31%	17%
Calling you babe, honey, sweetheart	15%	22%	2%
Sexual comments (about clothing, looks)	13%	19%	3%
Whistling	11%	15%	2%
Unwanted sexual teasing, remarks	10%	14%	1%
Indecent exposure	10%	10%	9%
Stalking	7%	10%	1%
Making kissing sounds	7%	10%	1%
Masturbating in public	6%	8%	2%
Asking you personal questions about sexual life	6%	8%	3%
Groping, touching inappropriately	4%	5%	2%
Showing pornographic images	3%	4%	2%
Asked to have sex by a stranger	3%	4%	2%
Pulling or playing with your hair	3%	4%	1%
Unwanted kissing by a stranger	2%	2%	1%

To/from the station

	All Students	Women	Men
Using obscene/abusive language	16%	20%	9%
Whistling	16%	23%	2%
Calling you babe, honey, sweetheart	14%	21%	1%
Unwanted sexual looks or gestures	14%	21%	1%
Sexual comments (about clothing, looks)	13%	19%	2%
Stalking	10%	14%	3%
Making kissing sounds	10%	15%	1%
Unwanted sexual teasing, remarks	9%	13%	1%
Indecent exposure	5%	5%	4%
Asking you personal questions about sexual life	4%	5%	2%
Masturbating in public	4%	4%	1%
Asked to have sex by a stranger	2%	3%	1%
Unwanted kissing by a stranger	2%	2%	1%
Groping, touching inappropriately	2%	2%	1%
Pulling or playing with your hair	2%	2%	0%

At the platform

	All Students	Women	Men
Using obscene/abusive language	23%	28%	14%
Unwanted sexual looks or gestures	16%	22%	4%
Calling you babe, honey, sweetheart	16%	22%	3%
Sexual comments (about clothing, looks)	13%	18%	3%
Whistling	12%	17%	2%
Stalking	9%	11%	5%
Unwanted sexual teasing, remarks	9%	12%	1%
Making kissing sounds	8%	12%	2%
Indecent exposure	8%	8%	7%
Asking you personal questions about sexual life	5%	6%	3%
Masturbating in public	4%	6%	1%
Groping, touching inappropriately	3%	3%	2%
Asked to have sex by a stranger	3%	3%	1%
Pulling or playing with your hair	2%	3%	1%
Unwanted kissing by a stranger	2%	2%	1%

21. Do you feel it necessary to take any precautions against crime when using the train?

	All students	Women	Men
Yes	79%	85%	67%
No (Skip to REPORTING)	21%	15%	33%

22. Which of the following precautions do you take? (mark all that apply)

	All Students	Women	Men
Travelling only during daytime	38%	44%	26%
Dressing a certain way	34%	43%	15%
Avoiding carrying purses, wallets, or holding them close to you	34%	38%	25%
Sitting close to door	32%	36%	22%
Carrying some thing as a weapon	25%	28%	15%
Avoiding particular stops	24%	27%	18%
Not wearing jewelry	23%	26%	15%
Always travelling with someone else	18%	22%	11%
Avoiding particular lines	16%	18%	12%

23. Of the items listed below, select the three most important things that, in your view, can make travelling by train safer.

	All Students	Women	Men
Police patrolling subway stations	42%	43%	39%
More police officers patrolling subway trains	39%	40%	39%
Cameras (CCTV) on the subway trains	29%	32%	23%
Cameras (CCTV) at subway stations	27%	26%	27%
More lighting at subway stations	23%	25%	20%
Direct police line at subway stations	23%	25%	19%
Direct police line in the subway trains	25%	26%	26%
Digital timetable at subway stations	23%	20%	29%
"Women only" subway trains	10%	12%	8%
Frequent services	25%	24%	27%
Anti-harassment campaigns	9%	9%	9%

CRIME REPORTING

24. If you have been a victim of <u>sexual assault or harassment</u> crime while on the **bus, train, at the bus stop or station platform**, **or on your way to/from the transit stop**, have you reported it to anyone?

	All students	Women	Men
Yes (go to question 24)	10%	10%	10%
No (go to question 25)	90%	90%	90%
If you have not been a victim of sexual assault or harassment in a transit environment (SKIP to question 29)			

25. To whom have you reported the sexual assault or harassment crime (mark all that apply)?

	All students N	All students %
Parents	15	35%
Police	14	33%
Spouse	11	26%
Bus Driver	8	19%
Train Operator	7	16%
Other Family	7	16%
Transit Agency	6	14%
School Authorities	3	7%
Parents	15	35%
		N=43[11]

26. Can you indicate why you have not reported the sexual assault or harassment crime (mark all that apply)

	All Students	Women	Men
Did not believe criminal would be caught	42%	45%	26%
Wanted to avoid trouble	41%	44%	23%
Felt the crime was unserious	40%	41%	28%
Unsure how to report	31%	35%	12%
Embarrassment	23%	25%	14%
Did not wish to remember incident	23%	24%	14%
Fear of Police	10%	9%	9%

27. Did anyone witness the sexual assault or harassment crime?

	All students	Women	Men
Yes	26%	27%	20%
No or I'm unsure (SKIP to question 29)	74%	73%	80%

28. What was the reaction of other people witnessing the sexual assault or harassment while on the **bus, train, tram, commuting train, at the bus stop or station platform or heading to/from the transit stop**?

	All Students	Women	Men
Pretended not to see	68%	68%	64%
Watched at a distance	52%	54%	45%
Came forward and talked to victim	20%	20%	18%
Talked to offender	14%	14%	18%
Came forward silently	6%	6%	0%

29. In the last 3 years have you been exposed to serious crime (aggravated assault, robbery, rape) while on the **bus or train, at the bus or train stop/ platform or while heading to or from a transit stop?**

	All students	Women	Men
No (SKIP to question 32)	90%	90%	89%
Yes	10%	10%	11%

30. Please explain the type of serious crime **you** were exposed to.

	All Students	Women	Men
Robbery	23%	27%	14%
Physical Violence	47%	39%	58%
Rape	1%	1%	0%
Murder	5%	6%	3%
Theft	29%	29%	21%

31. Have you reported the serious crime(s) you have been exposed to (mark all that apply)?

	All students	Women	Men
No	63%	65%	57%
Yes, to the police	15%	13%	20%
Yes, to the bus driver	9%	6%	14%
Yes, to the train operator	4%	4%	5%
Yes, to the bus company	0%	0%	0%
Yes, to the rail company	1%	1%	0%
Yes, to family or friends	16%	19%	12%
Yes, to school	1%	1%	0%
Other (please explain)	0%	0%	0%

32. In the last 3 years has someone you know been exposed to serious crime (aggravated assault, robbery, rape, murder) while on the **bus, or train, at the bus or train stop/platform or while heading to or from a transit stop?**

	All Students	Women	Men
No	81%	79%	86%
Yes	19%	21%	14%

33. Please explain the type of serious crime that someone you knew was exposed to.

	All Students	Women	Men
Physical Violence	48%	49%	45%
Theft	42%	38%	58%
Rape	38%	40%	30%
Murder	5%	6%	0%
Robbery	1%	1%	0%

34. In the last 3 years have you been exposed to theft/pickpocket, jewelry snatching, or robbery while   on the bus, or train, at the bus or train stop/platform or while heading to or from a transit stop?

	All students	Women	Men
No (SKIP to 36)	93%	94%	92%
Yes	7%	6%	8%

35. Have you reported this crime(s) you have been exposed to (mark all that apply)?

	All students	Women	Men
No	78%	81%	75%
Yes, to the police	10%	17%	9%
Yes, to the bus driver	4%	9%	2%
Yes, to the train operator	2%	5%	7%
Yes, to the bus company	1%	2%	0%
Yes, to the rail company	1%	1%	2%
Yes, to family or friends	8%	12%	11%
Other (please explain)	0%	0%	0%

PRIVATE TRANSPORTATION

36. How often do you use a **traditional taxi** service (not Lyft or Uber)?

	All students	Women	Men
Often (at least once a week)	4%	4%	3%
A few times per month	6%	7%	5%
Not often (a few times per year)	13%	13%	13%
Never (SKIP to 39)	55%	54%	55%

37. Do you feel safe when using a taxi service?

	All students	Women	Men
Always	19%	18%	22%
Often	47%	43%	56%
Sometimes	26%	29%	17%
Rarely	5%	5%	3%
Never	4%	4%	2%

38. How often do you use ride-hailing services (Lyft, Uber, etc.)

	All students	Women	Men
Often (at least once a week)	23%	25%	19%
A few times per month	32%	33%	33%
Not often (a few times per year)	29%	29%	29%
Never (SKIP to 40)	14%	13%	16%

39. Do you feel safe when using a ride-hailing service?

	All students	Women	Men
Always	24%	16%	40%
Often	50%	52%	48%
Sometimes	22%	27%	11%
Rarely	3%	3%	1%
Never	2%	2%	0%

40. How often do you ride in a car?[12]

UCLA – How often do you drive a car?

	All students	Women	Men
Everyday	6%	7%	5%
5-6 days per week	10%	11%	7%
3-4 days	20%	20%	22%
1-2 days per week	32%	34%	26%
Less than once per week	24%	20%	33%
Never	8%	9%	7%

CSU-LA / CSUN – How often do you ride a car?

	All students		Women		Men	
	Driver	Passenger	Driver	Passenger	Driver	Passenger
Everyday	47%	43%	51%	47%	39%	37%
5-6 days per week	18%	14%	19%	14%	16%	15%
3-4 days	13%	9%	11%	13%	18%	5%
1-2 days per week	12%	21%	12%	14%	12%	24%
Less than once per week	8%	12%	5%	9%	14%	20%
Never	2%	2%	2%	3%	2%	0%

41. Do you own a car?

	All students	Women	Men
Yes	20%	18%	24%
No	63%	67%	56%
No, but I have access to a private car I don't own	17%	15%	20%

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12 This question was updated for clarity after the UCLA survey. We updated the question to ask separately about how often people rode in a car as a driver or passenger.

42. Do you feel safe in parking structures?

	All students	Women	Men
Always	11%	8%	19%
Often	43%	38%	53%
Sometimes	37%	43%	24%
Rarely	7%	8%	3%
Never	2%	3%	2%

43. How often do you use a bike?

	All students	Women	Men
Everyday	2%	1%	3%
5-6 days per week	2%	1%	3%
3-4 days	3%	2%	4%
1-2 days per week	4%	3%	6%
Less than once per week	11%	9%	14%
Never (go to question #41)	34%	36%	31%
I don't own a bike (go to question #42)	40%	43%	34%

44. Which of the following prevents you from using a bike more often (mark all that apply)?

	All Students	Women	Men
Fear of traffic collision	21%	21%	22%
Fear that the bike will get stolen	18%	15%	24%
Physically strenuous	9%	10%	7%
Fear of being harassed	4%	5%	2%

PROFILE

45. Are you an international student?

Yes	1%
No	99%

46. What is your 5-digit home zip code where you live during the school year?

47. Think about a transit stop that you use and is the closest to where you live during the school year. What is a pair of streets that intersect near this stop (e.g. 35th and Vermont)?

48. Please indicate your gender

Female	65%
Male	32%
Transgender female or transgender male	0% (n=5)
Other	1%
Prefer not to say	1%

49. Please indicate if you are LGBTQI (Lesbian/Gay/Bisexual/Transgender/Queer/Intersex)?

Yes	16%
No	77%
Prefer not to say	9%

LGBTQI by gender

	N	% Within Gender Category
Women	122	63%
Men	57	30%
Transgender male/female	4	2%
Other	10	5%
Total N	193	

50. Please indicate your race/ethnicity (check all that apply)

White/Caucasian	18%
Black/African American	3%
Latino	51%
Asian/Pacific Islander	19%
American Indian	0%
Mixed Race	9%

51. Please indicate your age

18-29	89%
30-39	9%
40-49	2%
50-59	1%
60+	0%

Appendix B
Agency Interview Instrument

1. Describe your job duties at your agency

2. Can you explain whether your agency perceives sexual harassment of passengers to be a major problem on your system?

   a. If you don't feel that this is a major problem, then what are your major agency concerns?

3. Does your agency conduct regular rider surveys? If so, do your rider surveys ask about sexual harassment and if so, how prominent is the issue of sexual harassment?

4. How do you allocate security resources to this versus other safety issues?

5. In what parts of your system is the problem more prominent (buses, bus stops, train wagons, train platforms)

6. What is the level of reporting of harassment incidents on your system (how many reports do you receive on average annually)? Has reporting increased in the last couple of years?

7. What do you do (what strategies do you employ) to address this issue(policing, security technology, anti-harassment campaigns, training of drivers, design strategies, other)

8. Do you have a sense of the total operating budget earmarked for transit security?

9. What are the biggest priorities for safety and security in your service area?

10. Do you have any new initiatives that target harassment in transit environments?