This policy brief reviews the evidence on interventions to address gender-based violence (GBV), specifically violence against women, in public transport systems, with a focus on developing country settings. Drawing on academic and policy literature, the brief explains women’s travel patterns, explores the types and patterns of abuse reported by women, and analyzes the implications of GBV on public transport for women’s psychological, social, and economic well-being. Finally, this brief offers ideas toward an integrated response along with recommendations to strengthen USAID programming and policy.

Key Messages

- Throughout advanced and emerging market contexts, women face GBV (especially sexual harassment or assault) while using public transportation systems. It is estimated that public transportation is the second most common place where sexual harassment occurs, after public streets.¹
- Women have complex travel patterns and specific mobility needs but often such needs are not recognized or met due to the lack of a gender-sensitive approach in the design of public transportation systems.
- GBV on public transport is a violation of the fundamental human rights and dignity of women and girls, resulting in adverse consequences for their psychological well-being, education, health, and labor market outcomes.
- Reliable data are often lacking, and GBV is likely to be underreported. Policymakers and development partners are left without a full grasp of the scale of the problem, let alone an evidence base for a robust response.
- There are significant evidence gaps on what works to reduce GBV on public transportation. However, available evidence suggests that the following are priorities for policy action and programming: changing underlying social norms that engender sexual harassment or assault, deterring potential offenders, and strengthening institutions to respond effectively to incidents.

¹ UN Women, 2015
GENDER DIFFERENCES IN TRANSPORTATION PATTERNS

Globally, women in urban areas have more complex travel patterns than men. In advanced and emerging market economies, a defining feature of women’s travel patterns is “trip-chaining”: the act of combining multiple short trips between two primary destinations. While men tend to have linear and direct trips between home and work, women “chain” together several multi-purpose trips within one ‘trip’, in order to juggle different responsibilities related to domestic work and childcare. For instance, a woman’s journey to work might include a stop at a health center and, on her way home, a stop at the market or to pick up children from school. Women also tend to travel more with children, and to plan their movements around their children’s mobility patterns and needs. As women’s labor market participation increases in both formal and informal sectors, their travel patterns become even more complex due to a need to balance domestic responsibilities with wage-earning activities.

Additionally, women in urban areas make more non-work related trips (e.g. after school activities and medical visits) than men, and are more likely to travel during off-peak hours when transport services are less frequent. They travel shorter distances, but also make more total trips, which are typically geographically concentrated. Recent research, however, indicates that younger women are now traveling further distances as they age, suggesting a possible future convergence in travel patterns of men and women. Due to their travel patterns, women place a premium on flexibility, even if it means paying more or spending more time on trips.

There are gender differences in choice of transportation modes, as illustrated in Figure 1. As women are less likely to own or have access to private vehicles, they are more dependent on publicly-available transportation, and are more likely to use public transportation than men.

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2 Public transport, n.d.
3 USAID, n.d.
4 Ng and Acker, 2018
5 McGuckin and Nakamoto, 2005
6 Peters, 2013
7 Ibid
8 Uteng, 2011
9 Allen, 2018
10 Kunieda and Gauthier, 2007
11 This finding comes from research set in an advanced economy contexts (see Tilley and Houston, 2016)
12 Allen, 2018
13 Levy, 2013
14 Bray and Holyoak, 2015; Nurdden, Rhamat and Ismail, 2007
15 Allen, 2018
Despite this dependency, access to public transportation services remains a challenge, especially for poor women and those with disabilities.\(^\text{16,17}\) This has consequences for their choices of transportation modes. For instance, studies find that women's lack of access to public transportation is a driving factor behind why women complete a higher percentage of trips on foot than men.\(^\text{18}\) Further, school-age girls facing harassment or victimization on public transport while commuting to school may opt not to attend school at all, hampering their academic pursuits.

Affordability concerns further drive girls' and women's use of informal transport modes. Informal taxis, cycle rickshaws, and mini-buses offer cheaper alternatives to formal public transit and are less regulated, but are also potentially more dangerous. Despite the risks, these informal transport modes appeal to low-income women in that they offer the flexibility (e.g. door-to-door services and flexible hours) to accommodate their complex travel needs.\(^\text{19}\)

Underpinning gendered differences in travel patterns are deep-seated gender inequalities in society. Gender roles and unequal power relations put the disproportionate concentration of domestic responsibility in women's hands. Evidence of this comes from time use data showing gender disparities in time spent on unpaid domestic work (5.1 hours per day for women vs. 2 hours per day for men).\(^\text{20}\) More often than not, domestic responsibilities, like child care, come with mobility needs, which in turn shape how women engage with urban transit systems. Further, urban poverty entrenches women's low social position in society and reinforces women's inferior access to transport, and subsequently, their rights to urban spaces.

\(^{16}\) Smith et al., 2007

\(^{17}\) Estimates from eight developing countries indicate that an average of 36 percent of people with disabilities consider public transportation as “not accessible” or “hindering.” The data are for Cameroon, Chile, Lesotho, Malawi, Mozambique, Nepal, South Africa and Sri Lanka and are not disaggregated by gender (see United Nations, 2019 for more details).

\(^{18}\) Peters, 2013

\(^{19}\) Peters, 2013

\(^{20}\) Rubiano-Matulevich and Kashiwase, 2018
A critical takeaway is that transport is not gender-neutral: women have specific needs and constraints in using public transport systems. This implies that relevant authorities should consider women’s specific needs and experiences at every step of transport planning.

PREVALENCE OF GBV ON PUBLIC TRANSPORT

Safety is a major issue that disproportionately affects women and girls while using public transportation systems. Where women have access to public transportation, they can be subjected to sexual harassment and violence. Younger and unmarried women are prime targets for such abuse in urban areas. Increasing attention to GBV on public transport, viewed from a whole journey lens (which considers a traveler’s entire journey from end-to-end), highlights how the travels of urban women in developing countries are fraught with GBV risks along the way, including on the walk to and from stops, while waiting at bus stops and transport hubs (e.g. bus/train stations or terminals), while boarding and alighting, and during rides.

Despite data availability constraints, small-scale studies in various emerging market economies have yielded a few quantitative estimates of the prevalence of sexual harassment in public transportation. For example, in a survey of 5,010 commuters in Delhi, India, including 3,816 women, 50 percent of women said they were sexually harassed on public transport, while 42 percent reported being sexually harassed while waiting for public transport. The majority of women surveyed in Karachi, Pakistan (78 percent) and in Baku, Azerbaijan (81 percent) have also reported experiencing sexual harassment while using public transportation.

Additionally, according to a survey of 1,010 women in three Egyptian cities, approximately 92 percent of women report facing sexual harassment on the street and in public transport, with 60.5 percent reporting being sexually harassed both during the day and at night. In Kathmandu, Nepal, 97 percent of women surveyed reported that they had experienced at least one or more incidents of sexual harassment on public transport including catcalling, or other forms of unwanted communication.

Another study of women’s personal security in three Latin American cities found similar results: in Santiago, Chile, for example, 89 percent of women reported that they had experienced sexual harassment on public transport at least once. According to the Inter-American Development Bank, 60 percent of women in Lima, Peru have been victims of sexual assault on transportation. An estimated 40 percent of women interviewed in Buenos Aires reported experiencing sexual harassment on public transport within the last 12 months. The lowest estimate of GBV prevalence on public transport found in this review is from Botswana, where a survey with a representative sample shows that 6 percent of women experienced sexual harassment while using public transport. Although differences in data collection strategies preclude direct comparisons between countries, there are likely noteworthy regional variations in the prevalence GBV on public transport.

21 Peters, 2013
22 Neupane and Chesney-Lind, 2013
23 Jagori and UN Women, 2011
24 Asian Development Bank, 2015
25 Shoukry et al., 2008
26 Neupane and Chesney-Lind, 2013
27 Allen et al., 2017
28 Ibid
29 Allen et al., 2017
30 Machisa and van Dorp, 2012
What’s more, women with disabilities are vulnerable to sexual harassment and violence in public transport systems, possibly to a greater degree than non-disabled women. However, more and better data are needed to understand the experiences of women with disabilities while commuting, especially in low- and middle-income countries.

Estimating the true prevalence of GBV on public transport is challenging. Sexual crimes against women are underreported, largely due to socio-cultural factors that discourage reporting, an absence of comprehensive mechanisms for reporting, and a lack of trust in available justice systems. As such, the prevalence estimates presented above likely understate the magnitude of the problem. Nonetheless, they underscore women’s safety risks—and needs—as users of public transportation services in urban areas.

**TYPE, FREQUENCY, AND GRAVITY OF GBV ON PUBLIC TRANSPORT**

Transport literature focuses GBV discussions on women’s experiences of sexual harassment and violence on public transport. Research suggests that there are three forms of sexual harassment that women most commonly face while using public transportation: verbal (e.g. passing lewd comments), non-verbal (e.g. leering looks), and physical (e.g. groping), as summarized in figure 3. There is also evidence of more serious offenses such as rape and sexual assault.

**Figure 3.** Common Forms of sexual harassment in public spaces, including public transport

<table>
<thead>
<tr>
<th>Verbal</th>
<th>Non-Verbal</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cat calling</td>
<td>• Showing pornography (e.g. naked pictures)</td>
<td>• Poking with penis</td>
</tr>
<tr>
<td>• Whistling</td>
<td>• Exposing genitals/masturbating</td>
<td>• Patting on the buttocks</td>
</tr>
<tr>
<td>• Unwanted sexual teasing or</td>
<td>• Unwanted sexual looks or gestures</td>
<td>• Touching/rubbing/squeezing breasts</td>
</tr>
<tr>
<td>remarks</td>
<td>• Stalking</td>
<td>• Brushing up against a woman</td>
</tr>
<tr>
<td>• Sexual comments about</td>
<td></td>
<td></td>
</tr>
<tr>
<td>clothing or looks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Being asked for sexual</td>
<td></td>
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<tr>
<td>favors</td>
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</table>

Adapted from Madan and Nalla, 2016

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31 Ludici et al., 2017
32 Ceccato, 2017
33 Jagori and UN Women, 2011
Sexual harassment is a serious issue for women and girls globally—regardless of the form it takes. According to a study from India, women perceive all forms of sexual harassment offences as serious. To illustrate, the study finds that women consider verbal abuse, including sexual comments on their clothing or body to be just as serious as physical offences such as being groped or poked by a man’s penis.34

It is important to note that there are statistically significant gender differences in the perceived seriousness of each form of sexual harassment in the public transportation context. Based on respondents’ initial ratings, authors of the India study mentioned above re-categorized each offence as “serious,” “moderately serious,” and “highly serious.” Comparative analysis of women and men’s responses showed that women respondent’s ratings of the seriousness of each offence were higher than men’s in all categories. However, the study found that both men and women have similar perceptions of the relative seriousness of each offence. For instance, small fractions of women and men rated whistling as very serious (27.5 percent for women vs. 19.5 percent for men). For a grave offence such as poking with a penis, however, significantly larger shares of men and women rated the offence as very serious (86.3 percent women vs. 77.6 percent men).

While less prevalent, women also face extreme forms of assault, including sexual (rape) and physical (murder), while traveling on public transportation. The brutal gang-rape and murder of Jyoti Singh Pandey, a 23-year-old student, on a moving bus in India in 2012 underscores this point.35 Although cases of rape and murder occur less frequently than incidents of sexual harassment and precise estimates are lacking,36 research suggests that such incidents raise public awareness on sexual harassment and prompt public demonstrations that can compel remedial action by government.37

**Location of Sexual Harassment on Public Transport**

There is limited data on the prevalence of each form of sexual harassment at various stages women’s travels in urban areas. That said, there is a consensus that women face considerable risks of sexual victimization while waiting at bus stops and aboard buses.38 Both men and women cite public buses/metros/railways, taxis/auto-rickshaws, and bus stops/metro stations as locations having high likelihood of sexual harassment occurring within them.39 This indicates that incidences of sexual harassment cut across formal and informal transport modes.40 Some have argued that buses are the most common public spaces where “maximum sexual harassment” occurs,41 although this is at odds with other research findings indicating that sexual harassment inside vehicles is lower because it is common for bus drivers, conductors, and other passengers to reprimand the offender.42 Evidence from Bangladesh suggests that most sexual harassment incidents on buses occur at the point of boarding, while a smaller proportion of cases is associated with ticket counters.43 Additionally, recent research points to mobile phones are emerging as tool for harassment, as perpetrators take pictures of women without their knowledge or consent.44

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34 Madan and Nalla, 2016
35 Barry, 2017
36 Jagori and UN Women, 2011
37 Gekoski et al, 2015
38 Jagori and UN Women, 2011; Madan and Nalla, 2016; Malik, Irvin-Erickson and Kamiran, 2017
39 See Madan and Nalla, 2016 for more details.
40 See Mungai and Samper, 2006 for cases in informal modes.
41 Jagori and UN Women, 2011
42 Aloul, Naffa and Mansour, 2018
43 Rhaman and Nharin, 2012
44 Butt and Sekaram, 2019
Riding taxis and auto-rickshaws also comes with sexual harassment risks, but sexual victimization may be less prevalent here as compared to other transport modes. Self-reported data from Indian women, for instance, show that 38 percent experienced sexual harassment in a taxi or auto-rickshaw, as compared to 79 percent at a bus stop.\textsuperscript{45} One possible explanation is that in the taxi/rickshaw environment, women passengers are likely to have identifying information about drivers (e.g. names and license plates) which limits opportunities for victimization.\textsuperscript{46} The semi-private setting of taxis and auto-rickshaws can also provide women with the opportunity to call for help or share details of their whereabouts. This noted, women may choose not to use taxis, especially when traveling alone, due to a lack of trust in taxi drivers.\textsuperscript{47} Some women have also expressed their preference for travelling in buses with a large number of passengers because this gives them a greater sense of security than traveling alone in a taxi.\textsuperscript{48} Of course, for many women taxis are not a viable alternative due to cost barriers.

**Perpetrators of Sexual Harassment**

Available evidence suggests that fellow travelers and operators are the major culprits of sexual harassment on public transport, but it is unclear whether women are more likely to be harassed by the former or latter.\textsuperscript{49} For example, in a study conducted in Karachi, Pakistan, 75 percent of women reported that they were sexually harassed by fellow passengers, while 20 percent said their harasser was a bus conductor (the operator responsible for collecting fares and boarding passengers).\textsuperscript{50} Only 5 percent of respondents reported that they were harassed by a bus driver. A similar study in Jordan supports some of these results from Pakistan: it finds that women are more likely to be harassed by fellow passengers than by drivers or bus conductors.\textsuperscript{51} Unlike the case in the Pakistan study, however, a larger share of women surveyed reported being harassed by a bus driver than by a conductor.\textsuperscript{52} Further, while Pakistani women noted that fellow passengers harassed them the most, women in Jordan reported that most incidents of sexual harassment were perpetrated by passersby on the street while they were walking to a transit stop or waiting for transportation to arrive.\textsuperscript{53}

It appears that sexual harassment in public transportation contexts is more likely to be perpetrated by young men than older men. When women in India were asked about the age profile of perpetrators, women mostly commonly identified young men in the 17-30 age range, followed by 30 – 45 year olds, only very small percentages of women identified the perpetrators as boys under 16 or older men above 45 years old.\textsuperscript{54} In the same study, 95 percent of male respondents perceived the perpetrator to be in the 17 – 30 age range. The same study revealed that, according to women respondents, most perpetrators acted individually. Male respondents thought the opposite: that most perpetrators acted in groups.

\textsuperscript{45} Madan and Nalla, 2016  
\textsuperscript{46} Madan and Nalla, 2016  
\textsuperscript{47} Neupane and Chesney-Lind, 2013  
\textsuperscript{48} Aloul, Naffa and Mansour, 2018  
\textsuperscript{49} Peters, 2013  
\textsuperscript{50} Asian Development Bank, 2014  
\textsuperscript{51} Aloul, Naffa and Mansour, 2018  
\textsuperscript{52} Ibid  
\textsuperscript{53} Ibid
Harassment Patterns and Risk Factors

Across time, space, and transport modes, women’s vulnerability to sexual harassment while using public transport is associated with the overcrowding of transport hubs and vehicles. The overcrowded nature of these spaces—especially in cities where availability of transport services falls short of demand—creates conditions that are conducive for victimization. Not only does overcrowding offer the anonymity to commit a crime undetected, but it increases the probability than an attacker finds a victim.

GBV on transit occurs at all times of day and night, though studies present mixed and often contradictory evidence on whether after dark hours are necessarily worse than daylight hours. A recent study from Jordan shows that sexual harassment incidents are more likely to occur during morning (31 percent of respondents) and evening (28 percent of respondents) peak hours than during night hours (7 percent of respondents).55 Another study in India supports these results: a larger proportion of women surveyed reported experiencing sexual harassment during the day than at night (41 percent vs. 36 percent).56 In the same study, 23 percent of women reported facing sexual harassment both during the daytime and at night.

On the flip side, researchers in Sri Lanka found a weak association between night travel and risk of harassment, and point instead to travel by bus and walking along lonely paths as more important risk factors.57 Although incidents of sexual harassment at night may be less frequent, most women are still afraid of using public transport at night, during which fear for personal safety is salient. Illustrating this point, a study in Lahore, Pakistan found women’s fears of harassment spiking after dark, particularly during episodes of power outages that resulted in bus stops and streets becoming extremely dark.58 What’s more, the relatively low prevalence of night-time sexual harassment in public transport contexts may also be a reflection of the fact that most women are more likely to use public transportation during the day than at night.

It remains unclear whether one risk factor can be identified as driving harassment, or how the various factors interact with one another. That said, for many women in developing country cities, victimization during the day and at night is a common experience. Timing of harassment coincides with routine activities such as traveling to the marketplace, work, or school. In the context of Sao Paulo’s metro system, for example, peak timing of sexual violence is during the rush hour on the journey both to and from work.59

Evidence from around the world indicates that safety concerns are among the most important factors that shape women’s mobility decisions. Consistent with this, GBV on public transport has a consequence of limiting women’s mobility, in part because of the psychological trauma that comes with experiencing sexual harassment. In the absence of safe public transport, women face violations of their fundamental rights, with adverse impacts on their social and economic well-being. Such concerns may also reinforce parental decisions to not allow daughters to travel alone, limiting adolescent girls’ opportunities to engage in extracurricular, civic, or economic activities.

54 Jagori and UN Women, 2010
55 Aloul, Naffa and Mansour, 2018
56 Study does not comment on whether or not this difference is statistically significant.
57 Perera, 1997
58 Irvin-Erickson, Malik and Kamiran, 2019 [manuscript submitted for publication]
59 Ceccato and Paz, 2017
GBV, PUBLIC TRANSPORT, AND DEVELOPMENT OUTCOMES

As with sexual harassment that occurs in other settings, sexual harassment on public transport has direct harmful effects on women’s mental health and well-being. Repeated exposure to sexual harassment—along with the post-traumatic stress symptoms that result from those experiences—is associated with more depression and overall psychological distress for women.\(^{60}\) Women who experience sexual harassment are likely to have increased risk of anxiety and thoughts of self-harm.\(^{61}\) Nearly two-thirds of women surveyed in Nepal reported that experiences of sexual harassment on public transport leave them with feelings of sadness and fear, emotional distress, and disempowerment.\(^{62}\)

Women’s Response to GBV on Public Transport and Impact on Welfare

In addition to the psychological trauma women face, sexual harassment in public transport limits women’s mobility and infringes on their rights to access public spaces. Public transport is a critical service that links women to economic opportunities and vital social services, such as education and healthcare, and civil engagement. GBV in public transport, however, weakens this link. Several reports show that personal security concerns—about sexual harassment, in particular—prompt many women to reduce their use of public transport services.\(^{63}\)

Women may choose to avoid public transport totally, use it only at times when they feel relatively safe, or severely limit night travel in response to the problem.\(^{64}\) Fear of victimization may also drive women to use more expensive transport modes, such as taxis, in which they perceive victimization risks to be lower.\(^{65}\)

For women who have previously experienced sexual violence while traveling on public transport, the effect of fear on mobility decisions is particularly pervasive.\(^{66}\)

Because women are heavily dependent on public transport, limited access to safe public transport acts as a hindrance to their participation in activities that are crucial for their socio-economic well-being, like work, education, healthcare, leisure, and visiting family. Available literature point to the following issues, albeit mostly qualitatively:

**Labor Market Outcomes:**

- Concerns about safety in transit systems and their associated effect on women’s mobility limit the extent to which women can freely and fully participate in labor markets. Crucially, International Labor Organization’s (ILO) analysis finds that limited access to and safety on transportation are the most significant barriers to women’s labor force participation in developing countries. According to ILO estimates, these factors reduce women’s probability of participation by 16.5 percentage points.\(^{67}\)

Putting this in perspective: in Tláhuac, Mexico, where 50 percent of female commuters report being victims of sexual harassment in public transport, exposure to assault may be perceived as an unavoidable cost that comes with accessing high paying jobs in the city center.\(^{68}\)

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\(^{60}\) Ho et al, 2012  
\(^{61}\) Gautam et al, 2019  
\(^{62}\) Neupane and Chesney-Lind, 2013  
\(^{63}\) OECD and ITF, 2018  
\(^{64}\) Asian Development Bank, 2015; Jagori and UN Women, 2010  
\(^{65}\) Gekoski et al, 2015  
\(^{66}\) Korn, 2018  
\(^{67}\) International Labor Organization (ILO), 2017  
\(^{68}\) Gonzalez et al, 2016
Due to actual or perceived violence in transit, women may narrow their search for employment to areas close to their homes, to avoid engaging with public transit systems. In pursuing employment close to home, they may also forego higher-paying jobs located in central business districts. Others may yet remain confined to unpaid domestic work. Where women succeed to find jobs located far from home, GBV in transit affects their ability to retain those jobs. In addition to the socio-emotional effects of victimization for women (e.g. physical and psychosocial trauma, victim blaming and stigmatization), sexual victimization on public transportation is associated with reduced productivity on the job and even job losses.

**Education Outcomes:**

- A common use of public transport by urban women is to engage in activities that contribute to human capital development, such as schooling. Research in Liberia found women’s ability to concentrate in school may be compromised by their experiences of harassment on the journey to school. According to one study, girls in Somalia are likely to encounter sexual violence on their way to and from school. What’s more, when parents perceive public transport to be unsafe, they are likely to keep their girls out of school, with adverse consequences for their education and economic prospects as adults. Additionally, women may choose to attend a lower quality college over higher quality ones in order to travel via routes perceived to be safer. For those enrolled in school, unsafe transit conditions might affect their retention and completion rates.

**Access to Basic Services and Recreation:**

- Safe public transport free from all forms of victimization is essential for women’s access to essential services, like healthcare. In constraining their freedom of movement, GBV on public transit settings also precludes many women from enjoying the cultural and leisure amenities that urban areas offer.

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69 Anand and Tiwari, 2007  
70 Action Aid, 2011  
71 Action Aid, 2011  
72 GCPEA, 2019  
73 Peters, 2013  
74 Borker, 2018  
75 Alam, 2018  
76 Smith, 2008  
77 Allen, 2018
USAID APPROACH TO GBV PREVENTION ON PUBLIC TRANSPORT

In 2015, USAID published a guidance document, Building a Safer World: Toolkit for Integrating GBV Prevention and Response into USAID Energy and Infrastructure Projects, which provides a framework for integrating GBV prevention and response into its transportation projects. The document acknowledges the gendered differences in women's mobility patterns as well as their vulnerability to GBV while traveling. USAID's strategy to integrate GBV considerations in its infrastructure projects focuses on key stages of the project cycle: design, construction and implementation.

**Design:** USAID seeks to identify and prioritize women's safety issues during project designs, in order to ensure that designs are gender-inclusive. Through focus groups and interviews, project planners gather data on the types of GBV women encounter on public transportation, GBV patterns, and their effect on user experiences. These data are then used to inform design choices. The approach also prescribes safety audits, focused on documenting the quality of transport infrastructure (e.g. lighting and walkways) and identifying situational risk factors. Where possible, USAID transport projects also provide or advocate for safe spaces for women in transit settings (e.g. police kiosks in bus terminals).

**Construction and Implementation:** To prevent sexual harassment at the implementation stage, USAID emphasizes the need to work with local stakeholders to understand GBV patterns and develop avenues for women to report incidents. The approach also calls for the development of written policies that detail protocols for addressing GBV incidents that occur during project implementation.


ADDRESSING GBV ON PUBLIC TRANSPORT: LANDSCAPE OF INTERVENTIONS AND EVIDENCE BASE

Women’s limited access to public spaces as a result of GBV on public transport translates to an infringement of fundamental civic rights and adverse impacts on their wellbeing. GBV on public transport is a development challenge that warrants an effective policy response. In recent years, several types of interventions to address GBV in transit settings have emerged and are gaining traction, both in policy and academic literature. While their application requires customization to different urban contexts and evidence of effectiveness, the interventions are all based on the shared recognition that public transport systems must become more responsive to women’s specific mobility and personal security needs.

The discussion that follows presents findings from a review of the literature on six intervention types, including considerations for policymakers when applying these interventions in specific contexts (Figure 4). A key observation from this review is the significant dearth of empirical evidence on the effectiveness of each intervention type. Nonetheless, while the evidence landscape includes several theoretical claims with little empirical support, available studies have yielded relevant insights.
Figure 4. Interventions to Address GBV on Public Transport

<table>
<thead>
<tr>
<th>Intervention Types</th>
<th>Factors to consider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Design</td>
<td>Cost Effectiveness</td>
</tr>
<tr>
<td>Safety Measures</td>
<td>Social Acceptability</td>
</tr>
<tr>
<td>Behavioral Interventions</td>
<td>Legality</td>
</tr>
<tr>
<td>Gender-Specific Accommodations</td>
<td>Enforceability</td>
</tr>
<tr>
<td>Technology-Based Solutions</td>
<td>Timeliness</td>
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<tr>
<td>Legal Measures</td>
<td>Scalability</td>
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</tbody>
</table>

ENVIRONMENTAL DESIGN AS A PREVENTIVE MEASURE

Studies at the intersection of crime prevention and transport planning have found that the design of a physical environment can facilitate or deter crime. Street lighting is a prime example where policy literature argues that improvements could drastically benefit women’s mobility, both while walking in streets and at stops or stations, as potential perpetrators find themselves at a higher risk of being noticed and apprehended. Additionally, it is likely that police and transit security officers may also be less inclined to patrol poorly lit areas due to concerns about their own safety, which would further compromise women’s safety in transport environments.

In well-lit urban conditions, particularly with Closed Circuit Television (CCTV) coverage: 1) offenders are less likely to go unnoticed while waiting for a victim, 2) increased visibility of one’s environment increases perceptions of safety, and 3) passersby interventions are more likely to be effective, both by recognizing and reporting crime in real-time. Good lighting matters for women’s actual and perceived safety while traveling. Research demonstrates that dark streets leave women vulnerable to all forms of violence, including sexual harassment. As such, it is imperative to provide good lighting beyond transport hubs and terminals, particularly on arterial roads.

More broadly, poor design of urban public transport (e.g. lack of sanitary toilets, poorly located stops, inadequate pedestrian infrastructure, and lack of rest areas for pregnant women) heightens women’s feelings of insecurity while traveling. For example, UN Women’s recent safety audit of transport services in Pakistan found that women consistently ranked the lack of proper toilet facilities as a major risk factor. Particularly when traveling with children, they are forced to plead with roadside restaurant and shopkeepers to let them access toilets, which puts them at heightened risk of victimization or assault. Such considerations have consequences for women’s access to public spaces, further reinforcing the need for transport planning to consider their specific needs.

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78 Irvin-Erickson and Lavigne, 2015
79 OECD and ITF, 2018
80 This review finds no study to demonstrate the relationship between lighting and police patrol behavior either in transit or non-transit settings.
81 Gekoski et al 2015
82 Jagori and UN Women, 2010
83 UN Women, 2017
STRENGTHENING SAFETY MEASURES

Bolstering Alert and Reporting Systems

Studies throughout the world, but particularly in developing countries, have shown that women are reluctant to report incidents of GBV. Women may be unaware of reporting systems or do not expect such systems to be effective. In some cases, women may fear their families might immediately start preventing them from leaving home for educational or employment activities, or be subjected to victim shaming.84

Lack of reporting is a direct response to the absence or inadequacy of reporting mechanisms, which many women cite as a reason for not reporting offenses. Thus, reporting must be made easier and more comfortable for women, with increased confidentiality so women will trust that their privacy is guaranteed.85 These systems need to be effective (e.g. lead to prosecution of offenders) or force relevant changes in transport operations, bear appropriate penalties, and mitigate risk to victims who come forward. This matters because underreporting not only understates the scale of the problem, but also leaves transit authorities with inadequate data on patterns and trends of violence—a critical input for effective responses to the problem.86

Specific interventions to bolster alert and reporting systems include the provision of reporting hotlines and the creation of safe spaces at transit hubs, where targets of GBV can lodge complaints. Mexico City, for example, implemented the Viajemos Seguras initiative that created dedicated safe spaces where women could confidentially report cases of sexual violence and harassment in public transport.87 The intervention targeted the most crowded stations in the city and staffed them with female officers for most of the day, including during rush hours when offenses are most likely to occur.

However, reporting mechanisms are often difficult and uncomfortable, and, perhaps more importantly, are ineffective and rarely lead to prosecution of offenders. Even when they do, penalties for crimes like harassment are typically minor—a reality that may prompt victims to question the value of taking the effort and risk to come forward and report. Despite these challenges, experts nonetheless emphasize the importance of ensuring that the reporting pathway is both clear and accessible to women.88 This includes enabling access for people with varying accessibility challenges: physical disability, language barriers, technological barriers, literacy and so on.

Increased Security Staff Presence or Smarter Patrolling

A related strategy to reduce GBV in public transit settings is to increase the presence of security personnel or transit staff at bus and train stations. This is a frequent response to the issue and is intended to deter offenders and increase the sense of safety among female travelers. Having a larger number of security personnel patrol a transit environment is expected to serve at least two purposes: on one hand, it can deter offenders (i.e. prevention). On the other, it facilitates a response by increasing the ease of reporting and quicken the speed with which someone being attacked receives help. Tactics under this strategy include elevating the visibility of female security officers as well as using plain clothed officers to catch offenders unawares. An example of this in practice is an initiative in Bogota, Colombia, where the police force introduced an elite squad of officers to apprehend offenders in the bus system during rush hour.89

84 Malik, Irvin-Erickson and Kamiran 2017
85 D’Silva, 2018
86 Ibid
87 Dunckel-Graglia, 2013
88 Action Aid, 2016
89 Gekoski et al, 2015
Because sexual crimes against women in transit settings show temporal peaks that coincide with their routine activities, there is a need for strategic deployment of additional security presence.\textsuperscript{90} Intervention designs ought to focus deployment of security personnel at times and in areas where violations are most likely to occur, i.e. where women are most vulnerable. For example, an initiative to reduce sexual harassment for Indian women commuting to college focused on deploying more officers during college hours.\textsuperscript{91} Or, community members should be empowered to request additional patrolling during special events such as local festivals where susceptibility is well-known.

**Gender-Responsive Trainings of Transport Staff**

Increasing the presence of security personnel in transit settings alone will not guarantee improvements in women’s safety. Preceding analysis showed that transport personnel may also perpetrate sexual harassment against women, an indication that increasing security personnel may create new vulnerabilities. As such, there is a need to train transport staff, including but not limited to security personnel, on how to prevent, document, and respond to GBV on public transportation.\textsuperscript{92} An expected outcome of such training is that transit staff become better equipped to intervene when women are subject to victimization. One can also expect that a well-informed public transport workforce would be less inclined to perpetuate GBV against women. Further, the conduct of a well-trained transport workforce could help make women feel more comfortable and confident to report cases of sexual harassment.

In practical terms, where there is an absence of clear policy guidance and legal frameworks on reporting or responding to GBV incidents, such gender-responsive trainings of transport staff are likely to fall short of reducing women’s vulnerability to GBV in public transportation. What’s more, introducing such trainings to operators of informal transport modes would likely pose a challenge, given perennial constraints of coordination within the informal sector. This noted, nonprofits and advocacy groups could play a critical role in facilitating such training through community-driven approaches.

Taken together, this review finds no formal evaluation of the aforementioned security measures in developing country contexts. However, research from advanced economies suggests that women perceive increasing the presence of security personnel as an effective way to address transit-based GBV. For example, one survey of commuters in New Zealand shows that increased security presence ranks first among other measures perceived as useful to improve safety while traveling on trains.\textsuperscript{93} When women in Coventry, United Kingdom were asked about what measures would make them feel safer in public transport, increased security presence emerged as the second most popular measure (20 percent) after increased lighting (41 percent).\textsuperscript{94}

\textsuperscript{90} Ceccato and Paz, 2017
\textsuperscript{91} Natarajan, 2016
\textsuperscript{92} Alam, 2018
\textsuperscript{93} Kennedy, 2008
\textsuperscript{94} Osmond, 2013
GENDER-SPECIFIC ACCOMMODATIONS IN PUBLIC TRANSPORT OPERATIONS

A common policy response to GBV on public transportation is the creation of “safe spaces” for women, through gender-specific accommodations such as women-only buses or trains or women-only sections within those vehicles. In Rio de Janeiro, for example, transit operators introduced women-only cars in light-rail system during peak rush hours. In Lahore’s bus rapid transit system, women-only sections are designated at the front of the bus, with separated queuing and female security staff monitoring boarding and alighting at the stops. Gender-specific accommodations are either enforced by local laws, or by norms that emerge naturally over time by society, such as women taking front section seats in public buses. 95

The logic that guides these solutions is that removing male passengers from close proximity to women should lead to lower perceived and actual levels of threat. 96 Specifically, women-only transport solutions take away, albeit momentarily, a key condition for crime: the convergence of offenders and likely victims. Moreover, perpetrators may feel more entitled to sexually harass women in public spaces than in safe spaces reserved for women.

Available evidence calls into question the extent to which women-only accommodations are an effective long-term solution to sexual harassment in public transportation systems. While there is evidence that some women have demand for such solutions, women may hold mixed views on the benefits of sex-segregated accommodations, depending on how they are implemented in a given context. Evidence of some women’s perception of the positive impact of sex-segregated transport on their safety comes from Mexico City, where 40 percent of women surveyed reported that such services offer a guaranteed way to travel safely.97 In contrast, researchers found that in Lahore, Pakistan, some women perceived the provision of front seat reservations in minivans as creating additional discomfort for them, owing to physical proximity to the driver.98

This review finds one study with a rigorous estimate (with a caveat) of the impact of gender-segregated transport on women’s safety. Set in Rio de Janerio, the study showed that randomly assigning women to ride in a women-only train car reduces their experience of physical harassment by 40 percent, as compared to those who ride in non-segregated train cars.99 This study also showed that women who can afford to are willing to pay much higher fares for the ‘safer’ women-only transport option, with the goal of avoiding sexual harassment being the main driver of demand for those services. As one might expect, the positive impact of the safe spaces on women’s safety is stronger when sex-segregation is enforced.100 In the Brazilian experiment, the effect of sex-segregated transport was halved when the rule was not well enforced. This finding is supported by the earlier mentioned study in Mexico in which a significant proportion of women reported that women-only options would make a difference on their safety only if men are forced to respect the women-only designations of such spaces.101

95 Shah, 2018
96 Ibid
97 Dunckel-Graglia, 2015
98 Malik et al, 2017
99 Kondylis et al, 2019
100 Kondylis et al, 2019
101 Dunckel-Graglia, 2015
The safer women-only transport option might reduce incidence of sexual harassment for those women who ride in them, but brings negative consequences for those women who do not. Specifically, the Brazilian study showed that commuters associate women riding in public space (i.e. on non-segregated transport) with “more openness to sexual advances”— an indication that sex-segregated transport might in fact normalize the harassment of women in public spaces. Perhaps the most notable flaw of women-only transport solutions is that they fail to address the underlying cultures, norms, and attitudes that allow sexual harassment in public places to persist.

In addition to their lack of a strong evidence base, a salient criticism of women-only solutions is that they are a victim-blaming approach that places the responsibility on women to avoid being abused rather than stopping men from perpetrating sexual harassment in the first place. Moreover, sex-segregated transport tends to marginalize transgender and other non-binary groups who are typically excluded from women-only spaces. From a human rights perspective, many women wonder why they ought to curtail their mobility choices to feel safe, when, in fact, freedom from threats of crime and violence should be a protected right.

These shortcomings reveal the ways in which women-only solutions are not based on sound understanding of the role of gender in public transportation. For this reason, many women-only solutions are but a band aid approach to a complex problem.

BEHAVIORAL INTERVENTIONS

To make public transport safer for women users, some interventions seek to inspire behavior change through information campaigns that raise awareness of sexual harassment and its impact on women. Broadly, these interventions appear to have two main behavior change goals:

1) reduce men’s acts of violence against women and, 2) increase reporting of GBV incidents by women and other bystanders.

Such campaigns often have varied strategies, including targeting offenders with messages that condemn sexual harassment on public transport. Messages of that nature also drive toward changing male attitudes towards sexual harassment and, in this process, challenge social norms that allow harassment to thrive in public spaces. Some information campaigns target women with messages that affirm their rights to public spaces. Beyond affirmations, such campaigns also encourage reporting behavior by inviting women to report offenses and providing information on avenues to report. Other campaigns focus on sharing information on concrete steps for bystanders to intervene when harassment is being perpetrated. From an implementation standpoint, these behavioral interventions typically involve deploying media items such as posters, billboards, and handbills in or around transport terminals and other public spaces.

Communication campaigns may have broad reach, like the Sri Lanka’s Stop Harassment of Women campaign that reached over 30,000 commuters. The extent to which public engagement with campaign messages leads to behavior change remains unclear. However, notwithstanding, a World Bank evaluation of a pilot project to address sexual harassment in Mexico City’s transit system offers some promise. The study found that campaigns increased awareness of GBV among transport users. Equally important is the finding that the strategy increased the “behavioral intention to act” among men. In addition to behavioral effects, campaigns could also increase pressure on urban authorities to respond to women’s public transport safety needs.

102 Kondylis et al, 2019
103 Jackson, n.d.
104 Shah, 2018
106 VAWG, 2015
107 World Bank, 2017
There is limited evidence on the effectiveness of behavior change campaigns. However, experience from existing efforts suggest that campaign messages should be informed by research on what kinds of message would be effective for men and women.\textsuperscript{108} Ensuring that campaign messages do not reinforce negative stereotypes or blame victims for sexual harassment is essential for such efforts to have a chance at success. In terms of timing and effort, long-term campaigns may be more effective than large, short-term ones, as sustained public engagement on the issue is necessary to generate desired behavioral and attitudinal changes.\textsuperscript{109}

**TECHNOLOGY-BASED SOLUTIONS**

Technological advancement has opened avenues for technology-based solutions to social problems, including GBV on public transportation. In recent years, transit agencies and nonprofits have developed applications to facilitate reporting of sexual harassment and subsequent geospatial analytics to reveal patterns in urban public safety. An important contribution of such technology-based solutions is that they enable greater efficiency in creating and sharing data on vulnerabilities and actual incidents of harassment, which can help improve transparency by holding authorities accountable for undertaking rectifying measures (e.g. Safetipin (India), HarassMap (Middle East), Safe City (Pakistan)).

The conceptual link between technology-based solutions and improvement in women’s safety in public transport rests on two key assumptions: first, transit agencies have the capacity, willingness and incentives to design, deploy and learn from technology-based solutions, which make it easier for them to take action. Second, riders believe that circumventing traditional and manual reporting systems at police stations would be more efficient and safer and, importantly, reporting vulnerabilities and incidents through new platforms would instigate rectifying action by authorities.

In practical terms, implementing technology-based solutions to improve women’s safety depends on the presence of several enabling factors: technical capacity to create custom solutions, incentives to utilize newly created data for decision-making, ability to generate resources to create and implement solutions, extent of literacy or language barriers, and level of the public’s access to and familiarity with smartphone technology. The experience of an official Women’s Safety app implementation in Pakistan shows that technical capacity and financial resources are relatively easily mobilized. But because users were unconvinced that their complaints data was being analyzed for meaningful change in ground realities, within three years, active users have depleted dramatically. Once again, rigid institutions appear to have prevented much needed behavioral change.

This review finds no known study assessing the degree to which technology-based complaint systems result in tangible improvements in women’s safety in the public transportation context. This noted, available evidence suggests that, as standalone interventions, technology-based solutions are likely to have limited impact on women’s vulnerability to GBV on public transport. According to one study, unless other institutional reforms to enable rapid response to complaints are undertaken, technology tools would not have a meaningful effect on women’s fears of crime and sexual harassment.\textsuperscript{110} Key reforms that matter for technology-based solutions include changing incentives of government agencies to respond to complaints.

\textsuperscript{108} Gekoski et al., 2015
\textsuperscript{109} Lambrick and Rainero, 2010
\textsuperscript{110} Irvin-Erickson et al., 2018
LEGAL MEASURES

Some countries have adopted laws that prescribe stricter criminal penalties for sexual offenses committed against women on public transport. The laws have the primary purpose of deterring perpetrators of sexual violence. For example, in September 2018, Brazil passed a law that recognizes sexual harassment—including incidents on public transport—as a crime punishable by up to five years’ imprisonment. Prior to this development, acts of harassment in the country lacked a criminal definition, further compromising women’s safety in transport settings. Other pieces of legislation are more ambitious in their aims. Mexico adopted amendments to several laws to recognize that sexual harassment on public transport constitutes a violation of women’s rights to urban resources. These amendments also served to elevate transit-based harassment as an issue of institutionalized discrimination.

In addition to providing specific punishments, legal instruments may also grant public transport operators with discretion to punish offenders. Others provide for safety measures, such as increased surveillance, and women-friendly and gender-specific accommodations, including women-only carriages.

The case for legal responses is strong: for instance, survey research finds that women identify the absence of anti-harassment laws as a perceived reason for sexual harassment on public transportation. However, there is a lack of evidence on the effectiveness such laws, though journalistic reports emphasize increases in arrests and reporting rates as important measures of progress.

That said, existence of anti-harassment laws alone does not guarantee desired behavior change, given the socio-cultural roots of the problem. Further, efficacy of legislation also depends on a strong enforcement environment, with the right implementation modalities, incentive structures, coordination mechanisms, specialized law enforcement units, and courts, etc. Without these, harassment is likely to persist despite the criminalization of harassment. Put differently, anti-harassment and related legislation are necessary but insufficient inputs for reducing transit-based harassment.

STRENGTHENING EVIDENCE ON EFFECTIVENESS OF APPROACHES

Available evidence on this topic stems from the fields of criminology, applied geography, and urban planning and sheds light on the prevalence and severity of GBV on public transportation systems. From a regional standpoint, however, there are significant evidence gaps on GBV on public transport in sub-Saharan Africa. Existing studies offer rich insights into the causes and consequences of women’s perceived safety risks and strategies for mitigating them. Yet, rigorous evidence is needed on effective policy responses to the problem, in particular, on what works and under what circumstances. Against this backdrop, there is also a lack of research and evidence into the ways in which transport environments engender GBV.

At least three factors can help explain the lack of evidence on effective solutions to GBV on public transportation: 1) limited prioritization of and policy attention to women’s safety, especially in developing countries; 2) lack of gender disaggregated mobility and user experience data in public transport systems, and; 3) difficulty in resolving the tension that comes with conducting research on an issue as sensitive as GBV without increasing stigmatization or outing victims.

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111 Government of Brazil, 2018
112 Dunckel-Graglia, 2013
113 Asian Development Bank, 2015
114 OECD and ITF, 2018
As governments and development partners introduce policies and programs targeted at addressing GBV on public transport, there is an immediate need to undertake rigorous evaluations to gather operationally relevant insights from the implementation of those efforts and learn more about their impact on women’s safety and mobility. In the absence of a robust evidence base, interventions around the world appear to be designed based on limited evidence, or are merely replications of perceived successful initiatives in other contexts.

Building a robust evidence base of successful interventions and carefully documenting their long-term impacts on social welfare, particularly on women’s wellbeing, will help garner further interest among city governments. In order to ensure the next round of women’s safety and empowerment interventions are successful, multilateral and bilateral donors, private foundations, transit agencies, researchers and nonprofits must work jointly to produce a series of robust studies of what works in improving women’s safety in public transit, and more broadly, in urban public spaces.

**TOWARD AN INTEGRATED RESPONSE**

A policy conclusion that emerges from this analysis is that an effective response to GBV on public transportation requires pursuing at least five priorities, which could be advanced through the strategies discussed in the previous sections:

1. Recognize that public transportation is not gender neutral and, following from that, fundamental culture changes that center women’s needs (e.g. mobility and safety) in the design and delivery of public transportation services are needed.

2. Align transportation systems with broader behavior change efforts combatting social attitudes and norms that underpin gender inequality within and, more importantly, beyond the public transportation context.

3. Develop and implement policy and legal frameworks, which enable and empower stakeholders within the transportation system to address sexual harassment.

4. Strengthen the capacity of public transportation agencies/providers to enforce policies designed to ensure women’s safety in public transportation.

5. Collect gender-differentiated data to allow for a better understanding of women’s experiences in public transportation systems and to equip authorities with information required to respond.

The complexity of these challenges together with variation in local conditions suggest that there are no one-size-fits-all solutions. As such, progress in addressing GBV in public transportation will require a combination of interventions, tailored to local conditions.

Social and cultural norms often limit women’s roles in public life and changing longstanding societal perceptions is a difficult and slow-moving process not easily accelerated through public policies. Together with the dearth of robust evidence on what works for improving women’s safety, prevalent norms are another major barrier in the effectiveness of interventions discussed below, particularly in developing country contexts.

Given the complexity of this issue, and its deep links with societal undercurrents, extracting best practices from one context and applying them to another is fraught with risks. Without adjusting interventions to the local society’s culture and attitudes toward gender equality, the public sector’s resource constraints, and local labor market conditions, it is unreasonable to expect interventions that worked in one case to bring the same successes in another. For example, the apparent success of the Safetipin smartphone application in India—a country with high smartphone penetration in urban centers and heightened public scrutiny in recent years on women’s safety in public transport—may not be directly replicable in Malawi or Burkina Faso where neither of these pre-conditions exist.
Unless structural issues in systems of government are resolved (e.g. not having legal coverage for gender-specific accommodation or facing public backlash for bringing to light a taboo subject) any direct actions are likely to have limited success in practice. The following hypothetical examples are cases in point: 1) unless freedom from physical or verbal harassment is explicitly enshrined in local laws perpetrators could continuing finding loopholes to avoid punishments even with clear evidence corroborating victims' accounts, 2) unless public transport infrastructure and operations are designed to be gender-responsive (e.g. keeping in view women’s needs for lighting and safe transfers between modes of transport), no amount of CCTV cameras or smartphone applications for reporting incidents will help, and 3) unless social norms regarding women’s ‘appropriate’ role in public life are changed, no amount of gender segregated safe spaces on vehicles will improve their safety from harassment or discrimination. These factors must simply be kept in mind while designing, testing or evaluating solutions and in reality, both long- and short-term measures must be undertaken simultaneously.

Another useful manner of viewing the prioritization-sequencing conundrum is to focus on complementarities across measures, thus carefully analyzing which set of activities are likely to reinforce each other in a given case. For example, when transit services introduce women-only sections in public vehicles and announce punishments per local laws, CCTV cameras would be a great complement for deterrence to those who may consider defying the new accommodations. Similarly, the ideal complement to a new law on harassment would be media campaigns raising awareness, followed by the introduction of a new harassment reporting platform based on latest technology.

RECOMMENDATIONS

To address GBV in public transport settings, USAID should:

- Support initiatives to increase women’s representation in the transport workforce (including in decision-making roles) and elevate their voices in the transportation sector to facilitate mainstreaming of their specific mobility and personal security needs in transport planning and service delivery.

- Demonstrate how to minimize women’s risks in accessing services by assessing women’s transportation needs and identifying needed accommodations to inform the geographic location of education and workforce development projects.

- Include informal transit operators or leaders in gender-responsive consultations during the design of infrastructure projects, especially those that involve laying new roads. USAID should also work across programs to build local institutional capacity to achieve this consistently. Together, these steps would ensure that gender considerations in infrastructure planning are institutionalized as opposed to ad hoc.

- Coordinate cross-sectoral programming (i.e. activities working across multiple thematic areas, such as health, education, economic growth, justice and gender) to enhance support for women who have been victims of GBV on public transportation. In recognizing the multiple dimensions in which GBV hurts women, cross-sectoral programming can help ensure that women have access to a broad range of services to recover from the socio-emotional and socio-economic impacts of GBV.

- Build on existing USAID GBV prevention and response toolkits and programs to expand services to women who have been affected by GBV on public transport. These could include legal and psychological support services for victims, who often continue suffering effects years after they occur and have lasting negative impacts on women’s propensity to participate in the labor force.

- Leverage existing partnerships with other donors to co-design and fund research to build the evidence base for interventions to reduce GBV in transit settings, including in partnership with law enforcement, transit service providers, and city governments.
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