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LITERATURE REVIEW

EMPOWER – Practical Tools for Decision Makers and Citizens to Tackle Sexual Harassment in African Urban Transport

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Author(s)	Tanu Priya Uteng, Heather Allen, Jeff Turner, Lucia Cristea, Laurie Pickup and Paul Curtis
Lead contact	Laurie Pickup
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Abstract
EMPOWER builds the capacity of transport professionals to deliver gender-equitable, inclusive transport with improved participation, diverse sector workforce with a special focus on safety and personal security for women and girls. It specifically addresses the causes of sexually related harassment and assault on women and girls when they travel. The EMPOWER Decision-Making Tool will be a user-friendly, internet-based resource, assisting policymakers and transport providers to develop an evidence-based approach to addressing sexual harassment and personal security within public transport.

Keywords	Transport, Women, Sexual Harassment, Inclusive Solutions, Design, Policies, Programmes, Tools, Communication, Behaviour change, Sub-Saharan Africa
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FIGURES

ACRONYMS

BRT	Bus Rapid Transit
CCTV	Close Circuit Television
COM-B	Capability-Opportunity-Motivation-Behaviour
EBRD	European Bank for Reconstruction and Development
FCDO	Foreign, Commonwealth & Development Office
GBVAH	Gender-based violence, assault and harassment
HVT	High Volume Transport
IFAD	International Fund for Agricultural Development
SDGs	Sustainable Development Goals
UNDP	United Nations Development Program
WEL	Women Empowerment Link

EXECUTIVE SUMMARY

UNDP's Human Development Report from 1995 highlighted that 70% of the 1.2 billion people living in poverty worldwide are women. This figure has remained stubbornly high ever since[1]. It is thus naïve to assume that any development agenda can operate in a gender-neutral manner. The New Urban Agenda recognises this basic line of logic and promotes the issue of gender equality in the transport sector, as ensuring better access to education, employment and health has a positive impact on gender empowerment.

Across the world, women face real and perceived threats of gender-based violence, assault and harassment (GBVAH) while negotiating their daily travel. Further, increasing urbanisation along with trends in single women led households, feminization of urban slums etc. create intersecting layers of disadvantage. This report focuses on GBVAH faced by women while negotiating their daily travel in urban areas. Though it builds on findings emerging from across the globe, the report collates findings relevant for urban Sub-Saharan Africa. The aim of the report is to inform the ongoing project EMPOWER, which targets capacity building of transport professionals and other important stakeholders to address GBVAH in urban transport. To this end, the report collates the main findings on the topic of GBVAH to assist in designing a practical tool to address the needs of women and girls, particularly in Sub-Saharan Africa, in accessing safe and secure urban transport.

The report elaborates on the type and extent of GBVAH found in urban areas and the consistency of these findings across the globe. We found that the design and maintenance of urban features like street lighting, mixed land use, public transport stops and stations etc. had a major role to play in ensuring that women felt safe and opportunities for harassing women were reduced. Ways in which the smart mobility and smart city agenda can pay attention to this topic have also been discussed. A continuous gap in provision of reliable, gender-disaggregated data or non-availability of data, the under-reporting of sexual harassment on transport systems, a lack of clarity on reporting mechanisms and responsibility allocation, has ensured that GBVAH continues to exist across the world. The situation is compounded in urban Africa due to the dominance of informal modes of transport, where even higher incidences of GBVAH have been found. Further, it has also been noted that the operators, drivers and conductors of these informal modes of transport are often active participants in perpetuating GBVAH. The under-representation of women working in the transport sector, both at the decision-making and operational levels, has also contributed to the 'invisibility' of this problem.

To summarise, this review sets out to facilitate the creation of practical tools for decision makers to tackle sexual harassment in African urban transport. In order to create such tools, the first and most basic step is understanding how the issue of sexual harassment and urban transport intersect, variations in different contexts and steps to address GBVAH. Drawing on examples from around the globe, we frame a basic understanding on the topic. The second step for tool creation entails understanding the kind of data to be collected, monitored and evaluated. In order to address the second step, this literature review identifies data needs and emerging ways to collect data. The review finally presents some key considerations for tool deign and application.

[1] Azcona, G., Bhatt, A., Duerto Valero, S and Priya Uteng, T. (2020), *Harsh Realities: Marginalized Women in Cities of the Developing World* (New York: UN Women). Available at: https://www.unwomen.org/en/digital-library/publications/2020/02/harsh-realities-marginalized-women-in-cities-of-the-developing-world

SECTION 1: ABOUT EMPOWER

EMPOWER - Practical tools for decision makers and citizens to tackle sexual harassment in African urban transport - is funded by UKAID through the UK Foreign, Commonwealth & Development Office under the High Volume Transport Applied Research Programme, managed by IMC Worldwide.

The EMPOWER research objective is: "Policies, programmes, and tools needed to enhance women's personal safety on public transport".

The primary aim of EMPOWER is to develop a user-friendly online decision-support tool for urban transport planners and related stakeholders. This tool is envisioned to give them full visibility to the problems of sexual harassment and assault that women and girls face in urban Africa when they travel – taking them from problem definition to a package of measures to combat the issue. The following points highlight the sub-aims and working portfolio of EMPOWER:

- To build clear evidence, through African case studies, of the direct and indirect benefits of combatting the prevalence of sexual harassment and assault on women and girls when travelling;
- To provide women and girls with safe and secure transport that will enable them to have better access and choice of education, employment, health, community life etc.;
- To co-create solutions to provide the cities with essential decision-making resources;
- To develop a forward strategy by which cities can co-create local solutions with women and girls from a range of neighbourhoods in their city;
- To help fast track the knowledge base of and for stakeholders so they are in a better position to identify what technologies can be useful to them and what is affordable;
- To demonstrate how the problem of women's sexual harassment and assault can be addressed by multi-stakeholder collaboration, and how local partnerships can be formed based on the common interest to solve the harassment problem; and
- To influence further research and planning practices by demonstrating new types of data and variables that need to be collected to make gender issues more visible to decision-makers.

SECTION 2: INTRODUCTION

1. Background

It is an established fact that women and girls are subjected to varying degrees of gender-based violence, assault and harassment (GBVAH) in accessing public spaces across the globe. The intersection between accessing opportunities, public spaces and transport is tightly interwoven and cannot be analysed separately. Studies have repeatedly shown that sexual harassment on public transport is widespread in both the developed and developing parts of the world [1][2][3][4][5]. The existence of this phenomenon, thus, remains undisputed.

To quote a few examples, 55% of women reported that they were concerned about traveling to educational institutions after dark in Kigali, Rwanda [6]. In Kenya, 54% of women interviewed in 2015 said they had experienced some form of gender-based violence while using public transportation. And a staggering 99% of the women surveyed in the UN Women study in 2013 in Egypt had experienced sexual harassment, most commonly touching or groping, which involved harassment in public spaces inclusive of public transport and streets. The study showed that public transport and the general street environment were both vulnerable areas. Almost 70 per cent of women in a survey conducted by the EBRD in 2016 [7] were dissuaded from using the train to commute to work because of safety concerns in Egypt. These concerns were mostly a response to a high incidence of sexual harassment in public transport. For Mexico City, it has been reported that institutional programs had a limited effect on stopping abusive behaviour and sexual harassment of women in the public transit system, and 65 percent of female riders who had been targeted and victimised continued to be reluctant to report incidents [8]. In Buenos Aries, 89% of the women interviewed had experienced sexual

harassment on public transport; almost half of the women interviewed had been harassed in the year prior to the survey [9].

These staggering numbers have elicited certain responses from the government at all levels but most of the governmental efforts have failed. For example, putting up CCTV cameras in public spaces have been a popular response. But there is a substantial body of work to show that CCTV cameras do not increase a feeling of security in women [3]. It has been found that such lack of trust is due to a lack of follow-up protocols. If the images/videos captured in CCTVs are not monitored and do not help in preventing crime in in real time, then it becomes more of an assistive tool post incident than a preventive tool. Given the lack of data, most governmental responses are not evidence-based but extract ideas from other contexts which might or might not be applicable to their particular case. Further, "few transit agencies or policy makers have directly asked women riders about their safety needs or sought to identify women's proposals and preferences regarding safe and secure travel." [10, pp. 13].

The failures in achieving a substantial shift in how women face and perceive their personal safety intersects with how prevalent culture makes women feel safe or unsafe. Actions like teasing, groping etc. have sadly become an integral part of the way many men behave in public spaces in a wide range of countries including both high- and low-income countries. Gendered norms, values and consequently women's presence in social spaces (inside vs. outside[2]) are socially constructed and propagated. Such social environments have unfortunately sanctioned victimisation of women who are 'outside', and consequently, perceptions of safety and decisions on where and when to travel have been affected. The social environment that enables GBVAH cannot be addressed through transport planning and urban design alone, but the physicality of urban and transport structures plays a dominant role in encouraging or challenging the incidences of GBVAH. The simple act of 'stepping outside' the residential quarters is often linked to fear – from a young age, girls are taught to avoid walking on certain streets after certain hours; being alone in certain areas/neighbourhoods; wearing certain types of clothing, the ignoring of which might lead to incidences of GBVAH, and effectively it becoming the victim's fault. These instructions are repeatedly reinforced in the media and from family and friends, ultimately becoming embedded into the belief system of a society.

There is an existing continuum of harassment (visual, verbal and physical) that may be almost invisible to men. This includes leering, sexual comments, harassment, photography, intimidation, groping, threats, and other nuisances or crimes with sexual undertones [11]. These acts of harassment against women in urban transport vary in their degree, spatiality and temporality, ranging from sexual harassment, assault or violence on city streets, at public transport stations to inside the vehicles. These perceived and actual threats of violence have constrained female mobility to a great extent which not only has social ramifications but serious economic repercussions as well[3]. Another lacuna is also the fact that studies undertaken on the thematic area of 'gender and transport' in Sub-Saharan Africa, to date, have primarily focussed on the travel of rural women and girls and the main issues have converged on lack of infrastructure and poverty [12][13][14]. Women's personal security and safety concerns, tackling mechanisms and implications remains both under-studied and under-recognised.

2. The governance lens

In the overarching development goals, *gender* is integral to Sustainable Development Goals, and a number of targets include women's equality and empowerment as both an objective and an integral part of solutions. A UN High Level Panel delivered a report entitled '*Leave No One Behind: Taking action for Transformational Change on Women's Economic Empowerment'* (March 2017) concluded that women, society as a whole, and governments have critical roles if these objectives are to become a reality.

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[2] Given the patriarchal relegation of women to the private sphere, "a 'public woman' is a woman 'out of place'" [15, pp. 98]. Feminists have always "recognized the necessity of changing spatial relations, literally of invading space, 'in order to resist or combat and then to change the conceptual and social relations of gender'" (ibid, pp. 100).

[3] A McKinsey report from 2015 [16] concludes that women's employment is the driver for global economic growth and closing the gender gap could deliver $12 to 28 trillion of additional GDP in 2025.

Specific target associated with goals include SDG Target 5.2 goal on "the elimination of all forms of violence against all women and girls in public and private spheres". Further, urban transportation is seen as a key component of inclusive cities. SDG 11.2 states that by 2030, there must be the provision of access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

Despite increasing attention, efforts to reduce gender inequalities need a further push and acceleration. Women's roles and positions in African society has become increasingly diversified, with more women taking on traditionally male roles, and increasing numbers of women-led households. In 1989, only 30% of the households across Sub-Saharan Africa had female household heads, but by 2011, 60% of the households in the same region were headed by women [17].

Although we have seen an advance in equality and empowerment for women in the last decades, there remains numerous challenges to be addressed in terms of women's mobility. Despite its high incidence within the public realm in different countries, this issue has not been studied in a structured manner, and even less so in cities of low-income countries.

3. Methodology

The Literature review was based on a compilation of all published journal articles available on the following databases - Crossref, Google Scholar, IngentaConnect, JSTOR, Mendeley, ORCID, ResearchGate, Science Direct, SSRN, SpringerLink, SCOPUS and Web of Science. Additionally, the search included books, book chapters, conference papers and reports. Thus, the search covered both published works (relevant studies and literature across high priority academic databases relevant to the issue) and grey literature (from UN and other development organisations, consultancy reports etc.) to consolidate the findings emerging from across the world.

Aiming to map the state of the art in recent literature, journals articles were scanned from the past 20 years but where the issues were repetitive then only the most recent journal articles were included. A few seminal works emerging in the 1980s and 1990s that lay the foundation for understanding the close nexus between fear and gendered mobility have been included as well.

A data search and review protocol were developed to assure the scientific rigour of the search comprising three main steps: Search criteria, Assessment of topics and Data structure (qualitative vs. quantitative data). Some of the terms that were searched were as follows: women and safety; urban women and safety, public transport and harassment; sexual harassment on public spaces; women, campaigns on sexual harassment; women, public transport in low-income countries / LMICs; gender-based violence and transport, safety and access to education, health and employment in LMICs; urban accessibility, women; transport, capacity building; women, informal transport; women, informal employment; transport in developing countries – methodologies; transport in developing countries – data needs; decision-making tools and transport; decision support systems and transport; sexual harassment and decision-making tools; assault, planning and decision making; inclusive solutions, design, policies, programmes, tools, communication, behaviour change in Sub-Saharan Africa; smart cities; and smart mobility. Finally, an interpretative synthesis was carried out which consisted of an inductive derivation of the findings, discussions and constructs, based mainly on the authors' understanding of the focus, core ideas and arguments presented in the various articles, reports and documents.

Additionally, in a stepwise fashion, we requested inputs and feedback from our African project partners and reference group members to corroborate and validate the findings emerging from the literature review.

4. Structure of the report

This report is presented in seven primary sections. After briefly introducing the EMPOWER project in section 1 and the topic of gender, daily travel and GBVAH in section 2, section 3 delves into research findings to highlight the various facets of GBVAH in the field of urban transport. Section 3 looks at a range of topics like extent and type of GBVAH, emerging smart cities, female transport workers, monitoring mechanisms and behaviour change examples. Given that EMPOWER aims to design a decision-support tool on the topic of

GBVAH, section 4 talks about the need, structure and discusses findings on current decision-making tools. Access to data and gender-disaggregated data has always been a challenge, especially so in the African continent. Considering this gap, section 5 discusses data needs, evidence bias and decision-making. Based on the knowledge gathered from section 3-5, section 6 outlines the tool design considerations and provides a framework to both design and assess proposed tools. Section 7 presents a brief snapshot of the major conclusions.

SECTION 3: RESEARCH FINDINGS

1. Extent and type of sexual harassment, assault and violence

A large-scale survey of street harassment in 42 cities around the world in 2015 revealed that approximately 84% (from a sample of 16,600 female respondents spread across the world) had experienced street harassment for the first time before they were 17 years old [18]. A study conducted in 2012 in Quito, Ecuador as part of their UN Women Safe City program revealed that over 65% percent of women have experienced it. In India, 91% of women felt that public transport was very unsafe, unsafe or somewhat unsafe [19]. In Loukaitou and Ceccato's recent book [20], the Lagos (Nigeria) case study found that female college students were 2.2 times more likely to experience non-verbal sexual violence than males. Only 5% of students reported always feeling safe walking to/waiting at the bus/keke napep (tricycle) or motorcycle taxi stops after dark. About a third (31%) of the students had never felt safe walking to the transport stops at night, and about one-fifth (21%) rarely felt safe. Loukaitou-Sideris [10] examined the relationship between the built environment and women's fear of public transportation systems and compiled a comprehensive literature review, based on examples drawn primarily from the US, on "fear of transit /public transport". Their review highlighted that safety concerns have strong contextual determinants—public lighting, characteristics of sidewalks, isolation and neighbourhood characteristics.

Further, perceptions of insecurity vary in different urban environments—at the bus and rail stations, on their way to and from the bus and rail stations. Another study by Quinones [21] highlights the ways in which women in Bogotá, Colombia, experience sexual harassment in public space with special reference to public transport (inside vehicles, on stations / stops and walking routes to and from their origins or destination). Effectively, it is argued by Quinones, there are three main sections of any journey where women are at risk – (i) the 'first' and 'last' mile, (ii) public transport waiting areas and (iii) in vehicle (road or rail based). It is also clear that women develop individual strategies to avoid the risk of harassment, these include changing journey times and routes, only travelling in daylight, travelling in groups, requesting someone to meet them at the bus/rail stop to name a few. It is important to note that though women have developed coping mechanisms or personal strategies to address existing risks, this can include that they also choose not to travel at all. In one of the most extensive international surveys on the topic, it was found that over 82% of the respondents reported taking a different route home/to their destination to avoid GBVAH [18]. This is confirmed in various studies [9][22].

The Flone Initiative, a Nairobi based NGO, investigated incidents of violence against women and girls (VAWG) in Nairobi's public transport system and found it to be widespread across all the routes studied. Seventy-three percent of the managers, 44% of operators and 88% of commuters had heard of or witnessed cases of VAWG on their respective routes, with most incidents occurring at bus stations and in vehicles. This is confirmed by Mwangi [23], who further elaborates that the most common form of violence against women in Nairobi on the popular form of informal public transport, matatus[4], was abusive language (26%), indecent touch (23.3%) and physical harassment (20%). Importantly, the main category of aggressors was reported to be matatu crews (87%). Victims of gender-based violence in matatus were also often found to be silent spectators, reflecting a lack of protocols for raising complaints, and limited faith in the law enforcement agencies to tackle issues of gender-based violence (ibid). According to a study conducted by the Women Empowerment Link (WEL) in 2015 on the prevalence of violence against female commuters in Kenya, the most cited forms of

[4] Matatus are privately owned minibuses and the most popular form of public transport in Kenya. More information available at: https://en.wikipedia.org/wiki/Matatu

harassment were the use of derogatory language by bus crews, coercion of passengers to board public service vehicles against their wishes and unwelcome touching of female passengers.

Additionally, women's fear of harassment in daily travels has strong intersectional dimensions. Intersectionality in this context refers to how aspects like race, age, class, cultural and educational background, sexual orientation, disability status, participation in paid labour force, home-based or employment in informal sector etc. overlap and create variegated landscapes of fears and opportunities. A recent study from Bogotá [21] confirms this issue as intersections with age and class were found to play a very important role in experiences of sexual harassment in public transport and public spaces. Finally, the same study notes that policies proposed so far in Bogotá have been unsuccessful in reducing sexual harassment in public transport and, in many cases, do not tackle the problem.

2. Fear, crime and public spaces

The close conjunction between fear, crime and public spaces as experienced by women is a well-established theme across the world [24][25][26][27][28]. This fear has been shown to have a negative impact on livelihoods and physical and emotional well-being by limiting access to education[5], work, and leisure, restricting use of public space [29]. Studies on the fear of crime recognize that gender is the most consistent factor explaining who fears crime [30]. However, gender does not affect this fear in a singular fashion as highlighted before. Through reviewing studies on this theme, Whitzman [29] suggests that it is not gender per se, but economic and social powerlessness and exclusion that is the defining factor behind fear of crime. This is an argument echoed by feminist researchers such as Elizabeth Stanko [31] and Rachel Pain [26][32]. Similarly, the British Crime Survey from 2005 suggests that gender alone is not the biggest determinant of whether "quality of life has been greatly affected by fear of crime", but that people with low incomes, those who live in areas with physical deterioration or council housing, and single parents (all social groups in which women predominate) are most likely to have their lives significantly affected by fear of crime [33].

In developing countries, this is corroborated by slum dwelling, with female informal workers often citing fear of crime while going from bus stops to their homes through poorly lit pathways as one of the greatest deterrents for coming home after dark and accessing evening markets. For example, in Mexico City, a World Bank funded research [34] found that women living on the periphery of the city make difficult decisions over the trade-off between economic opportunity and personal security, as women's earnings are three times higher in the city centre, but over half experience sexual harassment on public transport. Similarly, the issue of urban policies and connectivity of cities with suburban areas remains highly problematic in Sub-Saharan Africa. As an example, our project partners highlighted that public transport access to Abuja's suburbs is provides solely by tricycle and motorcycle, but state's transport policy remains unclear and unempathetic towards such modes of public transport. Late last year, Abuja's urban authority banned the usage of tricycle and motorcycle, having most serious repercussions for women and school children.

The most fundamental economic measure, job growth, is also closely linked to women's participation in the economy. There is certainly a recognition of this fact as multiple development goals aims at generating awareness and improving the efficiency of education and welfare services for girls. However, one is yet to see something akin to a "safety index" which could score and monitor different areas, routes etc. being developed and adopted by urban centres across Sub-Saharan Africa.

Space (elaborated as 'social space' by Listerborn [35]) thus becomes the sum of physical space, discursive space that influences the (re)making of that space, and the discussions and actions that take place within that physical space. In essence, the domains of judiciary, executive, bureaucracy, technocracy, and politics seem to have a perfect correlation with the cultural domains of the society which relegates women to the private

[5] A recent study [22] in Delhi shows that girls are willing to go to less resourced and reputable colleges if they can use a safer route to avoid sexual harassment. The study covers girls attending college and warns that there may be many other girls who decide not to go to college at all due to safety concerns. This is a glaring example of how harassment has repercussions beyond individual lives onto educational attainment and the entire economy at large.

space and men to the public space. This perfect fit continues to be inversely proportional to the women's safety agenda.

3. Personal security, safety and physical access

Before embarking on the topic of GBVAH, it is essential to briefly discuss the main characteristics of the travel behaviour of women which affects both their perceived and actualized security concerns. Studies suggest that women generally use public transport, walk or cycle more than men to perform their daily activities and have more limited access than men to private modes of transport, such as cars that can provide them the personal space and security they desire [36][37]. Priya Uteng [37] notes that a consistent finding all over the world is that women depend primarily on public transport to meet their travel needs. For example, 88.7% of women in Palembang, Indonesia depend primarily on public transport.

In addition to big buses, women in Indonesia are also more likely to use other modes of para-transit, such as becak (tricycle), Ojek (taxi-motorcycle) and minibuses (oplet, mikrolet). Women are also more dependent than men on cycle-rickshaws in India, minibuses in Latin America, and combi-taxes and minibuses in African cities like Car Rapides (Ndiaga Ndiayes) in Senegal. Further, the use of informal Public Transport is dominant in African cities (e.g., Dar es Salaam, Nairobi, Cape Town and Kampala) owing to a nexus between restricted or no supply of formal transport[6] on the desired routes, timing and affordability issues [38][39][40].

Furthermore, there exists a strong coupling between high share of female employment in the informal sector and their dependence on informal transport. For example, it is noted that more than 70% of the households in Dar-es-Salaam who depend on informal livelihoods use the informal modes of transport such as minibuses, motorcycles and tricycles as their primary transport mode [41]. Additionally, women in Sub-Saharan Africa frequently travel with bulky loads from the market, smallholder farms etc. or frequently need to travel accompanied by children and elderly relatives which compounds their need for safe and secure access to activity centres. It is noted that cases of harassment, violent attacks or sexual abuse especially when transporting heavy goods and accompanying children are an integral part of the mobility landscape [42].

According to Verma et al. [43], women's perceptions of safety while travelling on buses influences their modal preference for buses. Fear and safety concerns cause women to shift from public transportation to less sustainable, private modes of travel. Often, women make decisions on where they go or which jobs they accept based on feelings of safety. Thus, the lack of safety has repercussions that extend beyond acts of violence and affect the socio-economic growth of a considerable demographic in society. Given this backdrop and the fact that a similar situation may exist in Sub-Saharan Africa, it becomes utmost essential to work with this topic to inform future projects as a number of transport infrastructure development is currently being planned in the region. For example, Kenya is moving ahead with plans to launch Bus Rapid Transit (BRT) and expressway among others.

Evidence collected from Los Angeles bus stops further reveals that women experienced a heightened sense of fear while waiting at the bus stop or station in the presence of homeless people and loiterers [44]. Safety, both inside the bus and at the bus stops, is paramount for low-income women to continue working to support their families. Smart cities are increasingly being planned and built worldwide having strong ramifications for how future public spaces are being imagined, but no city can be smart or sustainable if half its population doesn't feel safe and lives in fear of violence in its public spaces. It is crucial to understand gendered perceptions and experiences of fear and safety to ensure that public spaces and public transport are safe for everyone.

3.1 Urban features – street lighting, mixed land use and public transport stops/stations

Two tangible examples that underscore the need for a more holistic and nuanced perspective of gendered dimensions of safety are street lighting and toilets. The treatment of basic infrastructure provisioning, like street lighting and toilets, as gender-neutral issues ignores women's legitimate safety concerns. This trivialises

[6] The retreat of the state from provision of (formal) public transportation has been noted in multiple African countries, and due to this failure, privately owned informal transport systems of varying sizes and modes (buses, vans, jeepneys, motorcycles etc.) have come to dominate the urban transport landscape of the continent [120].

and normalises violence against women and the patriarchal exclusion of women from the public realm. Ensuring sufficient street lighting and toilets is the bare minimum that urban planners and engineers can do to facilitate women's safety and mobility, and yet, this need remains largely unmet.

Street lighting is a gendered issue – more street lighting makes women feel safer. In a cost-cutting measure after the 2008 economic recession, many US cities reduced the amount of lighting on city streets, which had an insignificant fiscal impact but a disproportionately detrimental impact on women's mobility and safety [45]. If engineers and planners view street lighting as a technical, engineering project without any consideration of how safety is gendered, they ignore the realities of street harassment and violence against women.

Under the UN-Habitat's Safer Cities Program, the local UN-Habitat Office in Warsaw, Poland conducted a Women's Safety Audit pilot project in 2007 [46]. Eight female participants comprising of women from the Warsaw municipality, police headquarters, UN-Habitat office, Chamber of Town Planners, a local NGO, and the media were involved in the audit of the Srodmiescie district in Warsaw's city centre. Participants identified concerns related to lighting, signage, receiving emergency assistance, infrastructural maintenance, and urban amenities. They also suggested improvements to enhance the safety and design of the neighbourhood and recommended to create mixed-use spaces in the neighbourhood to attract more human presence.

A Making Places Safer study in three London neighbourhoods noted that the following factors make women feel safer: Good street lighting; clear sight lines to public spaces by cutting back shrubs; giving pedestrians priority; legible public signage; and most importantly, public places occupied by a diverse range of people [47]. Various planners and sociologists highlight that seeing other people on the streets significantly makes women feel safer. This is why creating mixed-use urban spaces, allowing residential, commercial, recreational, and other activities to co-exist improves women's perceptions of safety. Jane Jacobs called this safety-in-numbers phenomenon 'eyes on the streets' – public spaces with medium-to-high densities and diverse uses make spaces safer by ensuring that there will be people and activity throughout the day.

However, sometimes these implications are counter-intuitive to typical 'modernist' exercises taken under the broad umbrella of urban planning. For example, Indian cities made urban investments focused on "cleaning up" and beautifying cities by driving away roadside hawkers and street vendors [48]. Planners failed to realize that the people they were driving away—the hawkers and vendors—were the extra eyes on the street that helped women feel and stay safe. Similar responses have been noted in African cities as well, as highlighted by the case country partners in EMPOWER. Thus, care and consideration of the local context must be made before making plans. Currently, architecture, planning and policies remain male-dominated, implying that the urban built environment is typically designed by men for men [44][45][46][47].

Women's inclusion in these decision-making processes can definitely help incorporate a gender perspective in assessing and designing the built environment. For example, in 2014, an app for women's safety called 'Safetipin' was launched in India, which allows women to 'pin' and audit public places based on nine criteria that are used to create a safety score for each pinned location [49]. The results help women make safer decisions about which places to avoid and notify concerned authorities, like police and urban planning authorities, so they can correct the situation. The app has now extended to over 20 countries. In late 2016, Plan International in Melbourne launched a campaign and a web-based interactive map 'Free to Be' was made live [50]. Over a three-month period, women could comment on how safe and welcome they felt in spaces all over the city by dropping 'pins' on the interactive, geo-locative map of Melbourne and suburbs. In total, around 1,000 women participated, and 1,318 pins were dropped that were either green (marking happy places) or red (marking sad places). The XYX Lab held a workshop with Plan International and the City of Melbourne in early 2017 in which the Victoria Police, public transport authorities, councils, NGOs and other stakeholders were invited to learn about, investigate and address these issues. One issue addressed was how building design affects women's perceptions of safety. It was found that buildings with transparent facades, such as cafes with glass exteriors and homes or offices with windows facing the street, enable surveillance of the streets from indoors. This applies equally to designing transit stops, stations and surrounding areas.

A critical part of public transport journeys is the wait at the stop or station. Studies report that women's safety (or lack thereof) while waiting for public transport can drastically affect their travel experience. Studies reveal that isolated bus stops, and un-staffed stations deterred potential public transport users and increased

use of private car. A study in a bus station area of Liverpool, UK [51] found that many avoided the station whenever they could, especially outside off-peak travelling times and at night, because it was often dark. According to a UK Department for Transport survey, an extra 10.5 % of public transport journeys would be generated if people felt more secure while travelling, particularly while waiting at the stations [52]. Case country partners in EMPOWER highlighted that this remains a big issue in African cities as well. For example, in Abuja, youths control the stops and unleash violence on female passengers, female taxi drivers and female bus conductors. They are called *agberos* and control the stops. Surprisingly, the government appears to be powerless in the current state of affairs in Abuja.

In Delhi, an assessment conducted by the Safetipin App mapped 275 bus stops in the city to measure the safety score and shared them with the Transport Department [49]. The data revealed that 44% of bus stops had an average score between 2 to 3.5 out of 5. The data also showed that 40% of the stops had poor lighting, which led to recommendations to improve street lighting.

A preference survey of bus commuters in Worcestershire, England, found that the constant maintenance and upkeep of transport facilities was the key to enhancing perceptions of personal safety among the bus riders [53]. In the same study, a postal survey for the Southeast Country was carried out, in which 47.8% of respondents from a sample of 1484 general public bus users reported feeling it was unsafe to wait for a bus for too long. The Transport and Travel Research [54] for the UK Department of Transport found that women wanted to keep waiting time to a minimum, as they felt most insecure at bus stops. Another study from three main metropolitan areas in Penang Island, Malaysia confirms that most women feel insecure while waiting at the bus stop, when they are not comfortable with services, when there is no indication of security and when they receive no information of the bus services [55][56].

Prendergrast [51] recommended upgrading the Liverpool station by opening restaurants and retail shop nearby in addition to improving lighting, replacing low-growth shrubs with single stem trees to improve sight lines and implementing regularly monitored close circuit television (CCTV). The shops and restaurants significantly reduced feelings of fear among the bus passengers, especially women, and thus increased the number of people using the station. After most improvements were made, a massive 77% increase in use of transit after 6pm was recorded.

CCTVs is a popular idea to make people feel safe at bus stops and stations and is one of the foremost recommendations for planning smart cities around the world. However, a study of the effects of CCTVs on safety perceptions in 'night-time economy' in Rotterdam and Utrecht in the Netherlands [57] reveals that most respondents were found to be rather indifferent or even sceptical about the safety benefits of CCTV surveillance. Consumers (men and women both) had doubts over CCTV's (perceived) capacity to intervene or reduce harm when and if they became a victim of crime, thereby suggesting that "…there are limits to the degree to which surveillance and policing by humans 'on the ground' can be substituted by digital surveillance." [57, pp. 331].

Yavuz and Welch [58] note that men have shown more trust in electronic surveillance techniques such as CCTV, women exhibit more trust in the presence of a security guard. Actual police presence was more reliable and effective in making people safe and whether CCTV footage was seen live or only recorded impacted people's perceptions of the safety in the presence of CCTVs. Overall, the trust and reliability of CCTVs could be higher during the day when people might expect someone to be viewing the footage live.

Another issue that often gets overlooked is the topic of underpasses, pedestrian subways, and the fact that many mass transit systems run underground, and some stations are built underground. Dark, desolate underpasses carve out conditions for targeting women. Further, weak or absent mobile phones signals in underground stations and transit can make one feel disconnected, invisible (to people above ground), vulnerable and unsafe, especially during off-peak hours or at night. It usually takes considerable time to get out of underground stations to a place where a proper signal can be received. This compounds the feeling of insecurity and discomfort. Such situations are similar to pedestrian subways, which women often avoid due to improper lighting, feeling of isolation and invisibility.

3.2 The Smart Elements

A global phenomenon which is making its presence felt in Urban Africa is the preoccupation with Smart Cities. But smart solutions need to be further analysed from a social and gendered perspective [59]. For example, concerns about access to paratransit digital platforms in the Global South have been voiced but not explored in depth [60]. And though the current mobility gap between social groups in Sub-Saharan African cities has been analysed (e.g., for gender equity see [61][62]), evaluating the existing digital solutions from an equity perspective is largely lacking.

To elucidate further, all major cities in Sub-Saharan Africa have a host of digital platforms based on smartphone solutions [63]. The census of paratransit digital platforms in African cities carried out since 2019 at LVMT, Université Gustave Eiffel [64] highlight a strong presence of digital platforms in African cities. In Kampala alone, the following digital platforms are currently available – Safe Boda, Bolt (Taxify), Uber, Friendship Taxi, Quick Taxi and Mondo Ride, and four paratransit digital platforms are operating in Abuja: Bolt, GUO Mobile, Oga Taxi and Uber (ibid). Current regulations focus primarily on road safety, taxation and protection of information, and issues related to access, personal security are not considered. Further, the role of public authorities in managing these paratransit digital platforms and their positioning in terms of both access to available data and usage of this data for designing transport policies for urban Africa remains unclear.

An example of technology-enabled governance-citizenry interface in urban planning is the use of WhatsApp in various Indian cities. WhatsApp has been useful in the sphere of women's safety too. The Delhi Police has created a WhatsApp number wherein women in Delhi can send photographs of auto-rickshaws or taxis they board to a registered WhatsApp number. The details are forwarded to the police control room and preserved for a week. More importantly, the WhatsApp group is integrated with the control room so that in case of an emergency, the nearest police control room or mobile patrolling vehicle can rush to the spot. There is also a dedicated helpline for women in India to report any kind of violence. The number 181 is the central helpline number for women and the Delhi Commission for Women (DCW) took over this service in 2016 due to insufficient response to calls. Due to staffing shortages, they were not advertising the helpline number since that would lead to more calls that they lacked the capacity to handle. According to DCW, around 214,772 calls made to the Women's Helpline number 181 have been answered between February 2016 – September 2017. The number 181 as a helpline for distressed women already exists in some Indian states but it is not integrated with other emergency services; nor is it a cross-state, all-India system. Since 2015, there has been a proposal to make a nationwide number for women in India to call when in distress, which has been slowly launched by all states.

There are also apps that women can download on their smart phones and use in case of emergency to alert their family or other loved ones. Some of them include Safetipin, Raksha, Himmat (especially for working women and only available in Delhi), Women Safety, Smart 24x7, Shae2Safety and bSafe. Many of these apps can send alerts without internet connection. Some of these apps also allow for geo-tagging of places as safe or unsafe to make safety improvements as necessary. However, unless there is an established formal follow-up protocol, such cosmetic interventions and any amount of data gathered through Apps will be made redundant in yet another data gathering exercise with no follow-up. Further, there is a risk that women might become tired of engaging with these apps and seeing no action on ground might make it more difficult to engage them in the future

When we talk about smart solutions, we need to also talk about access to these solutions and services. Access to digital services needs to be discussed beyond mere access to mobile devices, smart phones or even internet connectivity. It is also about digital literacy. In many low-income countries, disparities in digital literacy (as well as basic literacy) are an important hurdle in women's access to smart solutions and services [63][65].

Smart mobility solutions like bike-share, car-share, ride-share, ride-sourcing etc. are other important elements of the smart city. Ride-sourcing (also often known as 'on-demand-rides', 'ride-hailing', etc.) has provided a mobility solution that can be cheaper than owning and using a car, though it is still more expensive than using public transport. Thus, women who can afford to shift to ride-sourcing do so. There have been some safety setbacks in this sector. There have been widespread cases worldwide of drivers sexually assaulting female passengers. This has compelled these 'on-demand' or Transport Network Companies (TNCs) to conduct

proper background checks on drivers. However, often the actual drivers are friends or relatives of the registered drivers. This is easily detectable since people booking rides are sent a photo of the driver and can file a complaint with the company.

In response to women's safety concerns with ride-sourcing, over a dozen taxi services have been launched that are exclusively for women and driven by women across the world. However, these services often fail to get the necessary funding to scale-up. Traditional ride-sourcing services like Ola and Uber have a business model wherein they are not asset-heavy, as they do not have to buy their fleet of cars. Even if they decide to have their own fleet for some special services, they often appear to be easily able to get funding from investors. Meanwhile, the women-only cab has a different business model that requires investing in a fleet and staff and as such, encounter greater funding difficulties.

To summarise, the provision of street lighting, design and location of bus stops, and zoning for mixed-land use categories are some topics that fall directly under city design and planning regulations. Increasingly, however, the current urban planning and governance trend in many parts of the world leans heavily towards making cities "smart". There is a perceptible urgency in salvaging urban centres "stuck in paradigms of old physical and social development" and launch them on the path of "smart dynamism". Safety has an inherent role to play in truly enacting the dynamism, as is envisaged in the current smart cities agenda. It would, however, be a grave mistake to think that this dynamism will be inclusive, since the "social" element is largely amiss in the discourse.

The choice between smart-dynamism and social-dynamism is obvious in a low-income country context, but 'social' appears often to have a poor ring to it, which governments appear to want to stay clear of. A narrow focus through reimagining and planning for cities revolving around imageries drawn from cities of high-income countries, similar to "Manhattan shoreline", renders large segments of population (women, poor, disabled, children), large segments of economic sectors (comprising informal sectors) and large segments of urban areas (the slums, squatters, unplanned, unregulated lands) invisible. The underpinnings of a smart-cities agenda also inadvertently pointing in a direction where a similar set of invisibilities will be repeated, albeit in a technocratic manner. As such, we must be more critical of smart cities to ensure that they are smart for all.

4. Crowd-based solutions and citizen science approaches

New technologies, including user-generated web material and smartphone apps, have emerged as a novel method of addressing sexual harassment and assault on public transport. They are being used to report (non-emergency) crime to the police, collect and analyse data to identify crime hotspots, track journeys, take pictures of perpetrators or incidents to raise awareness about the problem through online platforms/forums and engage with the wider public to start and sustain conversations on the topic.

These platforms and projects can and have given women an outlet to express their feelings and validate their experiences. Collectively, accounts of such experiences are intended to help in engaging the public in a conversation about the topic; highlight the scale of the issue; inspire people to take action; empower those who have been victims; build a grassroots movement to end such behaviour and contribute to legislative change [3][66][67]. Measuring the success of such online platforms is not unproblematic as initiatives of this kind would not necessarily be expected to have a short-term impact on reducing unwanted sexual behaviours. What can be gathered, however, is a mix of qualitative-quantitative data to gain some idea of how many people and from which demographic sectors are accessing these tools and to what purpose.

The Everyday Sexism Project, set up by Laura Bates in England in 2012, aimed 'to catalogue instances of sexism experienced by women on a day-to-day basis'. Women could share their experiences online via the website, Twitter, or email and Bates says that, of the 25,000 stories that they have had so far, around 5,000 related to public transport with behaviours ranging 'from unwanted sexual comments and demands to groping and public masturbation, from being followed and harassed to being photographed against their will' [3, pp. 41]. US-based, Hollaback! is now a worldwide movement to end street harassment, encouraging those who have experienced or witnessed harassment to share their story on the website or via a smartphone app. Users can describe what they experienced or saw; the type of harassment encountered; where the incident occurred and upload these details. These stories are then available for people to read online.

In Egypt, HarassMap uses crowdsourcing or collective intelligence, allowing victims and witnesses to record stories of sexual harassment online. These are collated and displayed on an online map thereby allowing anyone to see where these crimes have been occurring. In its first year, the HarassMap website had 88,851 visits, 76,211 visitors, and 239,821 page views. In India, several smartphone safety apps are also available, and more are in the development stage. For example, in 2013 the government was reportedly in the process of launching a pilot project to test out a 'panic button' app – to be pre-installed on all basic models of phones – which would allow women to raise the alarm in an emergency situation. An app tentatively called 'Tell Tale' is also being developed to track vehicles, which can be used by connecting to the GPS network on-board. SafetiPin has a safety tracker which acts as a 'personal guardian', using GPS navigation to allow the tracking of a person who has turned their 'Track Me' button on.

In Britain, Project Guardian has a text number for passengers to report unwanted sexual behaviour on the railway network. The crime prevention charity Witness Confident has also developed an app called Self Evident which lets users report crimes to the police. This has the added advantage that victims can keep a record of the report themselves, making the police more accountable. Community action may also come in the form of public rallies, demonstrations, and marches. Examples of these are the Reclaim the Night marches, which began in 1977, and the more recent SlutWalks, which have now been held in over 200 countries. Some public protests and demonstrations may also take place in response to a particular incident.

Almost two decades after the introduction of women-only train carriages, female commuters in Japan are turning to technology to tackle molesters on packed rush-hour trains. The Digi Police app enables victims of groping to activate a voice shouting *"Stop it!"* at ear-piercing volume or bring up a full-screen message reading, *"There is a molester. Please help"* that they can show to other passengers. Digi Police has been downloaded more than 237,000 times since it was introduced three years ago It was reported that from the perspective of police officials, victims were often reluctant to call for help, but the app's SOS message allows them to alert other passengers while staying silent [68][69].

So far, limited attempts have been made to measure the effectiveness of these schemes in terms of how perceptions of safety have altered or if there has been a factual decline in incidents of GBVAH.

5. Female transport workers

Transport is primarily a male dominated sector. Women are poorly represented at all levels of employment and decision making, across all modes and subsectors [70]. This is especially true for operations with most senior positions still being held by men. Attracting, keeping, and advancing women in the transportation workforce is of key interest in both the developed and developing parts of the world [71][72].

A key barrier is the high levels of violence, discrimination and sexual harassment within the transport working environment. The International Transport Workers Federation states that its member unions across all modes globally, show that sexual harassment is widespread in the sector [72]. Additionally, due to a lack of diversity in the sector, women staff risk increased levels of sexual harassment both by the passengers and their co-workers.

A survey by European Transport Federation (ETF) [73] reveals that violence against women at work is a widespread and growing problem in transport, affecting women's occupational safety, health and wellbeing at work. It is particularly worrisome that violence is rarely a one-off experience and is likely to take place repeatedly over the working life of a female transport worker. Many respondents stated that violence is so widespread and pervasive in the transport sector that it is difficult to report and challenge it, resulting in many cases of violence not being reported. Many women suffer in silence, and deal with the ensuing physical and psychological health problems resulting from violence, and often quit their jobs (ibid).

For much of the developing world and especially urban transport services in Africa, the sector is largely informal, privately owned and operated, and the numbers of women working in this sector is even lower. They face high challenges to enter this male-dominated domain and need to have great determination to persist and succeed. Kamau of the Amalgamated Transport and General Workers Union (ATGWU) states that the transport sector "is the 4th largest employer of informal economy workers in Kenya but it remains largely male dominated. Only two out of every ten drivers are female, from a national total estimate of 19,000 drivers and the majority have no form of social protection coverage such as a pension scheme and/or health

insurance. The working environments and practices are often not adapted to women, and lack even basic minimum facilities like segregated bathrooms, changing and rest facilities. Conversely the extra investments required to have women on site makes employing more women unattractive to transport operators." [74].

Mwangi [23] argues that owners of the informal motorized transport services in urban Africa are particularly powerful political lobby in Kenya, Uganda, Nigeria and Ghana, and they often actively exclude women from participating in this sector. But the case of Kenya has made a dent in this scenario. The legal notice 161 of 2003 streamlined the operations of the matatu sector in the country, and it was found to have increased the access of women to the matatu service as commuters and as workers. This legal notice criminalised touting which had been taken over by illegal gangs. Further, the notice required that only persons of good conduct as certified by the police would be employed in the sector. By reducing the factors that traditionally supported a violent public transport culture, female access to the matatu sector was gradually increased. A second Legal notice, 219 of 2013, initiated corporate ownership of matatus thereby increasing opportunities for women entrepreneurs in this sector. Formation of Savings and Credit Cooperative Society (SACCOs) and the further evolvement of management companies facilitated delegation of day-to-day running of matatus to the SACCOs at a fee. This has greatly enhanced women's participation in the sector. Mwangi [23] notes that management of matatus by these corporate cooperative societies in Kenya was found to be favourable to women's ownership of matatus. So, even though the Kenyan transport sector remains largely male dominated, women are increasingly participating in the (informal) transport sector as owners, drivers, touts, stage clerks and fleet managers [74].

But despite this growth, these female workers have no contact with the formal social protection schemes as they are categorized as being 'informal workers'. Keeping the correlation between perceived safety of female travellers and female presence as employees in the transport sector, it is important to pay heed to the following questions raised by Kamau [74]:

- Can we design and integrate social protection for women transport workers?
- How can this be guaranteed?
- Are their services being valued? What is the evidence?

Figure 1: Female (informal) transport workers in Kenya. Source: Kamau, 2018 [74]

6. Awareness raising campaigns and impacts

Campaigns targeting sexual harassment and assault on public transport aim to raise awareness and disseminate information on the topic. More specifically, such campaigns have been employed to encourage women to report incidents, 'speak up' to change male attitudes towards sexual harassment and assault. Further, they inform the public about initiatives to reduce such behaviour, appeal for witnesses to come forward and publicize pictures of suspects. In this section, we present a quick snapshot of some ongoing campaigns targeting GBVAH.

In November 2014, the feminist group Osez le Feminisme (Dare Feminism) launched a campaign to *'Take Back the Metro'* in Paris, handing out leaflets and putting up posters on trains with anti-harassment pictures and messages. One of these messages read: *'Warning! Do not put your hand on my ass, or you could get slapped very hard!'* The group hoped that the campaign would raise awareness about sexual harassment on public transport and symbolically reclaim both the mental and physical space.

A year later, the French State Secretariat for Women's rights and State Secretariat for transportation launched the first-ever national campaign against sexual harassment and violence in public transportation in Paris and a dozen other partner cities called «Stop, enough is enough» (« Stop ça suffit ») in 2015. The campaign consisted of billboards in metro and train stations on display areas provided by the Parisian transport operators (RATP and SNCF) and JCDecaux. It represented the vision of a fictional metro line and described 3 different journeys, more and more intense after each station: the catcalls of an offender, the fear of a victim, and the hesitation to react of a witness. The campaign also takes the form of video clips and leaflets[7].

In 2008, the Massachusetts Bay Transportation Authority (MBTA) launched a public awareness campaign using large scale posters across the transport network to encourage victims to report incidents to the police, emphasizing that certain behaviour was not acceptable and would be treated seriously by the authorities. In 2013, the campaign was revived after numerous reports of indecent exposure and public masturbation on trains were reported. The new posters, which were displayed on trains and buses, featured photographs of both men and women holding up their hands, pointing at offenders, and crossing their arms. Slogans on the posters included messages such as: *'Respect my space,' 'Keep your hands off me,' and 'No means no.'* One poster, with the slogan *'Keep your privates private,'* carried the following warning against public exposure: *'Want the whole world to see you? No problem. I can snap your photo with my See Something, Say Something app, and send it to Transit Police'.*

A campaign, called 'Know the Difference' in the UK, targeted men's behaviour and attitudes towards women and unwanted sexual behaviour and offenses. Aimed at on-street sexual harassment, posters and advertisements were prominently displayed at tube stations and bus stops, in addition to clubs, pubs, and men's toilets. Such posters had different headlines – for example: *'Back to Mine. Back Off', 'Get it On. Get off Me', 'Flirt. Harass', 'Harmless Fun. Sexual Assault'* – followed by the same central message: *'Real Men Know the Difference. And so does the Law'.* At the bottom of each poster, it read: *'Rape and sexual assault are crimes. Sex without consent is rape. If convicted, you could face up to life imprisonment as well as being placed on the Sex Offenders Register. One night out could lead to a criminal record for life, losing your job and respect from your friends and family.'* The campaign won silver award in the best community safety campaign category at the Local Government Communications Reputation awards and was adopted by the British Army.

In Belgium, an anti-harassment campaign, supported by local government agencies in Brussels, was launched in 2012 with the slogan: *'Touche Pas à Ma Pote!' ('Don't Touch my Girl Friend').* The campaign included posters with images of big yellow hands with the message written on them in pink which were posted on trams for six months [75]. The images were also featured on the outside of pink subway doors and both men and women even wrote the slogan on the palms of their hands.

As part of Mexico City's wider initiative to change women's mobility, INMUJERES – the federal institute for gender equality and equal opportunities for women – started to run advertising campaigns throughout the city. Along with posters, they made use of billboards and bumper stickers, all of which read: *'It is our right to travel without fear'*. Below the slogan, a free 24-hour hotline number to report harassment was displayed.

Gekoski et. al. [3, pp. 37] provide an overview of some successful and failed advertising campaigns targeting public awareness about sexual harassment and assault. The success stories include MBTA's anti-harassment advertising campaign, where an evaluation conducted 4 years post campaign launch indicated that:

[7] Available at: https://www.youtube.com/watch?v=gtkMdNgL_Ng&feature=emb_title

- In the four years after the launch of the campaign, the number of sex offences reported on the MBTA increased by 32%;
- In the four years after the launch of the campaign, the number of arrests for sex offences increased by 96%;
- In the four years before the campaign, 35% of all sex offences on the MBTA were cleared from police books following an arrest; and
- In the four years after the campaign, just over half (52%) of all sex offences resulted in an arrest.

Gekoski et. al. [3, pp. 38] simultaneously issue a warning that campaigns must refrain from blaming or shaming women for sexual harassment and assault. Campaigns of this nature and subsequent failures have been recorded in Iran, Singapore, and Vancouver, Canada and thus outline the importance of extensive costumer consultations before launching any campaign.

7. Grievance mechanisms and existing solutions

In terms of sexual violence, assault or harassment – almost the entire range of these incidents are widely underreported, and there is a general perception among the victims that reporting is emotionally degrading and leads to nothing [9]. This is supported by accounts of women who have tried to report an incident and have faced several difficulties not only in finding where to report the incident, but also that the reporting process was often insensitive and time consuming. A study from Bogotá, Colombia showed that sexual harassment in public transport – and public spaces – is widespread in the city, and sexual harassment incidents are primarily under-reported [21]. At a global level, security agencies do not have female or trained staff to take the report. A lack of trust in the authorities and police is found to be widespread, and one of the primary reasons why most of these incidents (90% or more) remain underreported across Latin America [9][21].

Women are also anxious that they do somehow share the blame for the incident [76]. This social reinforcement is partially responsible for low levels of incident reporting. There is often also widespread confusion about what sexual harassment actually means and it appears that there is a difference in how men and women perceive what is acceptable and what is not. The UN Women Safe Cities program [77] worked with city authorities and NGOs in Torreon, Mexico, to institutionalise grievance mechanisms, bolster the capacity of the municipal government and transport agencies to respond to sexual harassment, and improve legal sanctions.

Studies indicate that women typically develop their own strategies to cope with the insecurity. This is confirmed in multiple studies including *Ella se mueve segura* / She moves where three Latin American cities were studied, and data analysis showed that women travelled accompanied more often than other groups, and that they develop their own strategies for addressing harassment [9].

8. Monitoring and feedback mechanisms

Though most urban areas lack a clear monitoring framework and routinised feedback mechanisms, there are certain examples to draw on. In Sierra Leone, the government created two key indicators to monitor the implementation of an inclusive project [78]. The first one measures users' satisfaction—disaggregated by gender and including questions about reliability, safety, accessibility, comfort, customer service, and sexual harassment. The other indicator measures how many women change from informal to formal public transport services. This change is used as a proxy to measure progress on the reduction of sexual harassment risk, given that women are harassed five times less frequently on formal public transport [79].

Additionally, UN Habitat's [80] practical tool is a rare example of tool for policymakers and practitioner within the African region, that explicitly focuses on addressing sexual harassment within public transport. The toolkit sets out a series of actions that transport operators and policy makers can take in order to deliver a more gender equitable transport system as well as specifically addressing sexual harassment on public transport within the context of urban Kenya. These actions range from establishing high levels of customer service standards, introducing zero-tolerance policies towards sexual harassment of passengers and staff, introducing passenger vehicles that accessible for people with disabilities and a range of other uses and implementing employment policies that are secure and are compatible with family responsibilities. The measures suggested

often appear relatively limited in scope and there are financial constraints to their implementation by commercial operators that needs a greater focus than provided here. The study is accompanied by ongoing technical support to help operators in implementing the measures. It is not possible to say how effective this approach is, but the intensive nature of the technical support approach may limit its scalability.

The Stakeholder Engagement Plan for Sierra Leone aims to close the feedback loop between government and citizens, which is critical for accountability, awareness, and improving project design. It includes plans for public consultation and disclosure to provide timely information about project activities and their potential impacts, as well as feedback and discussion opportunities to those groups.

This feedback loop can be used as a way to pilot, improve, and scale up solutions that bring the views of stakeholders and citizens. After three years of intense work, Freetown has changed the paradigm in planning of transport infrastructure and services—focusing first on the *who* rather than the *what*. They are now in the initial phase of implementation of this ambitious public transport reform. It will be a challenging process, but assuredly it will transform thousands of lives, especially those that need it most: the invisible travellers.

9. Behaviour change examples (and models)

Transport planning in Asia and Africa is undertaken primarily under the framework of Comprehensive Mobility Plan (CMP), which is a technical exercise following the 'predict and provide' optimization principles for travel demand and further validated through cost-benefit analyses [81]. Multiple studies emerging from Africa have reiterated the shortcoming of this approach, as the embedded technocratic focus fails to incorporate user needs and behaviour in transport infrastructure planning and provision in African cities [82][83]. Further, gender is seldom considered in transportation planning, and transportation is seldom included in the gender policy agenda, leading to a systemic gap in procedures guiding transportation design, planning and provision of services [84].

Additionally, there is a greater need for scholarship in applying behaviour change understandings to the field of transport, especially around personal security and new technologies. Emerging scholarship on the topic points towards the fields of *persuasive technology and nudging.* Persuasive technology is a field of research looking on the design development and evaluation of technologies aimed at changing people's attitudes and behaviours through persuasion and social influence.

Currently, much of this work focuses on health and people's wellbeing. Studies highlight examples of using messaging to change user behaviour and attitudes, and the effectiveness of persuasive messages to '*nudge*' users to make sustainable mobility choices, resulting in tools to accelerate behaviour change like tools developed in European funded MAX-SUCCESS (2009)[8] and CATCH (2012)[9] projects. However, there is little evidence that these tools were even taken up by local or national authorities and used to change or test behavioural modifications.

Interventions to promote transport behaviour are typically divided into those with structural or behavioural components, or those with a combination of both. Structural interventions involve modification of the physical environment (infrastructure) and policy nudges. Examples include road/fuel pricing, fiscal incentives, public transport improvements, safe cycle lanes, and pedestrianization of city centres.

Behavioural interventions target communities and individuals with methods directed at changing beliefs and attitudes about behavioural options or supporting self-regulation [85]. Most behaviour change stimulus target messaging that look to shift current behaviour to desirable behaviour of making sustainable mode choices. However, evidence of success of such approaches is often lacking. Arnott et. al. [86] found that there is little evidence of the effectiveness of existing behavioural interventions to reduce car trips.

Avineri and Goodwin [87] looked at the topic of individual behaviour change through evidence available in the domain of transport and health. They found behaviour change to be a dynamic process that takes place over time, relative to changes in personal or family circumstances, and is embedded in the framing of habit, context, legislative interventions, prices and incentives, trust and involvement. Lamsfus et al. [88] suggests

[8] http://www.epomm.eu/old_website/index.phtml?ID=2182&id=2183,%20Civitas,%202012

[9] https://cordis.europa.eu/project/id/234094 & https://cordis.europa.eu/article/id/91369-enabling-greener-transport-choices

that travel behaviour takes place in a hybrid state of intervening factors, including personal characteristics, trip-related characteristics, the environment domain, specific stage (time) of the travel process and the context variables operate in binaries (i.e. activated when the conditions that define them are present, and depend on other aspects such as the user's profile, recorded behaviour, the characteristics of alternative routes for the current trip and outside variables such as the weather). Anagnostopoulou et. al. [89] further developed this conceptual strategy based on the users' past behaviour as inputs. The recent plethora of mobile phone applications that compare journeys with trip planners and CO_2 calculators typically target shifting people's behaviours towards more sustainable choices at an individual level. But few have the capacity to monitor or measure the various stages of changes or aggregate the impacts of these changes.

Work on gender safety and security, however, needs a more encompassing behavioural framework than what is currently being applied in the field of urban and transport planning, and work on behaviour change could be further used to address this topic. Currently, very limited efforts have been made to target behavioural changes in addressing GBVAH within such fields.

For example, The Johns Hopkins University Center for Communication Program's (CCP) Ideation Model, a predictive model of behaviour change focusing on the cognitive, emotional, and social factors that influence individual decision-making, could provide the initial steps in thinking towards generating a behaviour change model addressing GBVAH [90]. The model asserts that how individuals think and feel about a health issue changes over time and can be influenced by communication within social networks.

This approach has been applied to the transport context by Pereyra et. al. [91] by analysing accessibility through the following four lenses - *physical* (can the individual physically access the desired transport services?); *financially* (can they afford the fares?); *cognitively* (do they understand how the system works? Where the stop is, how to make the bus stop etc?) and *emotionally* (do they feel safe taking this transport?). The study concludes that these four aspects heavily influence the transport choices women finally make, and most importantly, if they do not feel safe, even if all other aspects are equal, they choose not to take the trip a particular mode (ibid).

Furthermore, the Theory of Change (Hoff and Stiglitz 2016), structured around core concepts of "Motivation-Opportunity-Ability", which was originally proposed to predict consumer behaviour, has been further developed into "Capability-Opportunity-Motivation-Behaviour" (COM-B) models [92]. Here, capability has been defined as "the individual's psychological and physical capacity to engage in the activity concerned;" opportunity is defined as "all the factors that lie outside the individual that make the behaviour possible or prompt it;" and motivation is defined as "all processes that affect conscious decision-making and energise direct behaviour." Influences are likely to occur at three main levels: structural, social, and individual.

The COM-B model has been adapted by international agencies and organizations, such as the Academy for Educational Development and the World Bank Group, to inform water, sanitation, and hygiene projects [93]. Most recently, the COM-B model was developed into a practical framework to design and evaluate behaviour change, based on a review of 19 major behaviour change models and frameworks [92]. Such interventions in the infrastructure domain give us reasons to believe that similar frameworks can be employed to propose a structured approach in tackling GBVAH in urban Africa.

In summary, a behaviour change model which can address the incidences of GBVAH should respond to a number of interlocking structural, behavioural and physical elements. It should not be understood simply in terms of designing interventions that target men's behaviour. Even if the current problem, prima facie, is about men's behaviour, it would appear that the response system needs to be built around systems which can pick up GBVAH incidences, nudge people to behave properly and respond to inappropriate behaviours. Behaviour change thus needs to target both general population as well as policymakers given the inertia found in both popular and institutional culture on the topic of GBVAH.

SECTION 4: DECISION-SUPPORT AND DECISION-MAKING TOOLS

There are significant amounts of guidance and decision-making tools developed to explicitly address issues of personal safety and security, sexual harassment, assault and violence against women and girls within development projects in low-income countries in general. These include the guidance produced for the Department for International Development [94][95]- now FCDO - which focuses on addressing violence

against women in the design of DFID projects that are focusing on women's economic empowerment through employment, training and business support; through community development projects [96][97][98] and health sector [99][100]. These provide guidance on design of development projects but do not include more information on how to conduct situational analysis and baseline development or incorporate an explicit theoretical framework around producing change in the situation related to violence against women. The framework includes a theory of change based on social norms and the impact of attitudes, beliefs and norms on behaviour around violence against women.

There has also been guidance produced for International Development NGOs. One example is the guide produced by Oxfam UK for its staff and partners working on international development projects [101]. This again mostly focuses on the theoretical framework within which to understand violent behaviour towards women and girls and hence the theoretical justification for what measures to bring about change. The theoretical framework for action is also the focus of the guidance developed by ActionAid [102].

However, much of this guidance has been developed for the staff of the international development organisations and partners as its audience.

Several development agencies have also worked on a range of policy guidance and tools to support decision-making around gender mainstreaming within infrastructure sectors generally, such as Fraser et. al. [103], which sought to provide a framework for how to address violence against women and girls (VAWG) through programming and policy dialogue on infrastructure and cities for DFID staff.

Very little of this guidance is explicitly targeted at national and local authorities within low-income countries. It is also not targeted at process and decision-making outside of the decision-making and funding process of international organisations.

Conversely, there have also been a range of decision-making guidance developed on gender mainstreaming for the transport sector. These have included the Asian Development Bank's Gender Toolkit for Transport [104] which features guidance for Development Bank staff and national government staff developing transport sector projects across Asia and the World Bank's Operational Guidance for World Bank Staff [105] which also focuses on staff developing road transport projects across developing countries. Both guides feature checklists that technical staff can follow and example projects that feature gender mainstreaming measures. Personal safety and security are addressed in both guidance documents, though they are included in a much wider set of measures and most frequently focus on gender-based travel patterns and assumptions around travel patterns and women's economic empowerment. Here again, a focus on operational staff of international development agencies is a key focus.

There does appear less availability of tools for national and local policymakers and practitioners. Hamilton and Jenkins [106] developed one example. This is an audit tool to assess gender in public transport for the UK, that included an assessment of personal safety and security for women. This incorporated a series of checklist for central and local government decision-makers. However, there was a limited amount of guidance and resources on how to meet the questions contained in the checklist. A more comprehensive resource was developed by the World Bank for gender mainstreaming in rural transport, focusing predominately on Africa. The Gender and Rural Transport Resource Guide [107], though produced some time ago and in need of updating, seeks to provide a tool for policy makers, practitioners, researchers and capacity development specialists. It provides resources and guidance separated into distinct modules to allow users to work through individual sections and in line with their own need for guidance.

However, whilst this tool focuses on gender mainstreaming in transport, it does not appear to explicitly address issues of sexual harassment of women when mobile within a rural context. It does, however, provide a useful template for the development of tools relevant for practitioners and policy makers within the African transport sector.

An explicit focus on sexual harassment of women on public transport is provided by the tool produced by the UN Habitat [80]. This provides a practical set of tools for urban transport operators, civil society and policy makers focusing on *quality standards of operations, vehicle design* as well and approaches *to reporting and addressing sexual harassment*. This tool is limited in its supporting resources that practitioners can draw on and it covers a wide range of associated topics including transport fleet design and physical accessibility that reduces the detail that the tool is able to represent.

In summary, there have been significant number of guidelines and tools produced for addressing sexual harassment and violence against women in low-income contexts. These guidelines and tools tend to focus on specific sectors and infrastructure is represented in the sectors focused on. However, an explicit focus on the transport sector appears totally lacking. However, much of this guidance appears to be focused explicitly on the staff of international development organisations and their partners and is frequently connected to the financing process of international development process.

Simultaneously, several tools within the transport sector targeted at policymakers and practitioners have been developed. These have focused on the integration of gender equality within the development of transport policies, plans and programmes for low-income countries.

One clear example of these tools is the World Bank's Gender and Rural Transport Resource Guide [107] which is developed as training aid as well as a tool for practitioners across Africa. However, these tools tend to either to not clearly address the issue of sexual harassment when travelling or if they do, address it in a limited way. The UN Habitat's [80] practical tool is a very rare example of tool for policymakers and practitioner within the African region, that explicitly focuses on addressing sexual harassment within public transport. As a result, there is considerable scope for the development of decision-making tools, incorporating both formal and informal public transport operators and transport unions, that will focus on addressing sexual harassment on public transport in Africa.

SECTION 5: DATA AND APPLIED METHODOLOGIES

Data collection in many mid- and low-income countries remains a challenge, especially in Africa (Box 1 presents an outlier, and the rich information that can emerge from such data collection and analyses exercises). This extends to gender information and there is little information on gender, rather than biological sex in national census data. Further, most minority groups are not well recorded but especially those whose gender identity is different from their biological sex recorded at birth (transgender people for example). Indeed, the UK is one of the few countries where this will be recorded for the 2021 census [108].

Thus, gendered data in all sectors is still largely missing hampering reporting on progress towards the SDGs and Agenda 2030. New research on the state of data on gender equality reports that half of countries studied (67 out of 129 countries) – home to 2.1 billion girls and women – will not achieve any of five key gender equality targets by 2030 if their current pace continues [109]. The report covers access to education, political leadership, workplace equality laws, and safety amongst other topics.

A study by Vanderschuren et al [110] confirms that in Africa, as in much of the world, women make more care-related trips (escorting children and elderly family members), mixing them with travel for work (formal and informal paid occupations) and for education reasons. They cite a report on gender patterns in daily mobility based on the 2013 Household Survey, released by Statistics South Africa, which recommends that the "Department of Transport's commitment to the provision of effective and accessible public transportation systems needs to be treated with urgency", especially with regard to the poor living outside of the metropolitan areas where there are fewer transport options. Specifically, the transport needs of women performing (care) duties are often neglected and this is most likely because gender is not embedded in transport strategies. To date, there is no evidence of this being addressed.

An interesting case study comes from Freetown, Sierra Leone, as presented below.

Lessons from Freetown to transform urban transport

Sierra Leone's efforts to capture disaggregated data in Freetown looking at different groups' mobility needs and constraints was based on a survey of approximately 2,000 citizens and focus groups targeted knowledge building on needs, constraints, and perspective about urban mobility—with a significant focus on vulnerable populations. Some key observations:

- When asked about main considerations when choosing to travel, men value journey time and reliability more than women, while women value personal safety and security and cost more.
- Almost three times more women than men traveled with goods.
- Women were twice as likely to travel accompanied by children or elderly people.
- Women pay on average 8% more to travel because they must pay additional for their goods or they take several shorter trips.
- Among the surveyed women 18% said they had been sexually harassed on public transport.
- Incidents of harassment were not distributed equally between types of transport. Minibuses (locally called poda-poda) had the most reported incidents (28% of women users), followed by shared taxis and motorcycles. Only 4% of women traveling by formal buses reported sexual harassment.
- Around 38% said that large formal buses have poor or very poor accessibility.

Source: **Arroyo, F.A. and Diallo, B. (2020)** Invisible travelers": 3 lessons from Freetown to transform urban transport—and your city, *World Bank Blogs*, available at: https://blogs.worldbank.org/ppps/invisible-travelers-3-lessons-freetown-transform-urban-transport-

ActionAid studied three cities in the developing world (Dhaka, Bangladesh; Abuja, Nigeria; and Sao Paulo, Brazil) and found that women's perspectives had hardly been considered in the design and planning of urban transport, compounding gender inequalities [111]. They noted that gender-insensitive planning and design of public transport included the absence of adequate lighting in public spaces (e.g., roads, bus-stops, and train stations); poorly connected bus routes (lack of good interchanges); inconvenient bus-stops requiring long walking distances; lack of separate toilets and rest areas for women within bus stations; and lack of special facilities (e.g., storage space, priority seating, rails, and ramps) for vulnerable commuters such as the elderly, people with disabilities, pregnant women, and children (ibid). These aspects are commonly found to be inadequate in safety audits, of which there are a growing number of technology-based ones such as Safetipin [112]. As the information is quite precise and timely, the data collected can be used to identify crime 'hot-spots', safer travel routes as well as other interventions and improvements such as human and technical surveillance (ibid).

1. Identified Data Needs

Transport data collection in Africa remains poor on multiple accounts. As Priya Uteng and Turner [113] expand on this issue, there is a lack of routinised data collection strategy, and often data collection is driven by international infrastructure firms interested in road building projects. Additionally, the 1-day trip diary format of data collection on travel behaviour does not catch the entire range and complexity of women's daily mobility performances, as it inevitably omits women whose travel patterns might vary across a week.

Furthermore, most transport systems, within an African context, consist primarily of privately owned and operated minibus and motorbike taxis with few formal mass transit systems. Data is typically collected in respect to a major investment or project, does not cover the whole network but focuses on routes that will be displaced or where the authorities will need to address the paratransit or informal service operators [114]. In addition, the data is not widely shared. Klopp and Cavoli (ibid) also argued that using technology to collect data and use it to map routes and services would enhance equity and access. In fact, 92% of the world's low- and middle-income cities have no complete transit maps [115].

As noted previously, data collection is not a routinised process. For research purposes, it is noted that data collection is typically a mix of qualitative and quantitative methodologies but the data collected by government on the topic, if it happens, fails to blend the quantitative and qualitative data where in reality,

both are needed. Further, there is no clear and established protocol regarding Personal Security Impact Assessments undertaken by the public authorities before, during or after a transport projects are planned and launched. While World Bank, ADB etc. have developed gender action plans including protocols for sexual harassment, it is not necessarily adopted and used by respective governments.

Apart from the traditional means of data collection[10], technology-based means are increasingly being employed to collect general transport data and map the dense and widely used informal transport services. There are several examples of this being used in African cities. The Digital Matatu project, in Nairobi, was one of the first which collected data on stops and routes city wide. More recent work includes several cities mapping their public transport systems with smart phone technologies, such as Cape Town, Kigali, and Kampala [116].

Most studies covering the topic of GBVAH have employed a mixed-method (quantitative and qualitative) approach, including surveys, focus groups and in-depth semi-structured interviews. Based on the knowledge that sexual harassment incidents are not reported , it confirms that for successful gender-based research, both methods are required, as statistics may not be representative of women's actual travelling experiences if this is not validated with qualitative investigations. Many female mobility behaviours may not be based on economic or technical rationales but might be heavily dominated by perceptions of personal security ("*I choose not to use that service as I do not believe it to be safe*"). Thus, quantitative information must be further validated by both qualitative inquiries and soft-methodologies like story-telling exercises about personal experiences.

2. Data, evidence bias and decision-making

Globally, the majority of transport decision makers and planners are male and there is a paucity of disaggregated (by sex or gender) transport data across the globe [70]. There is little evidence of transport planning systematically addressing gender differences. The result is that most transport systems are planned with a bias (conscious or unconscious) towards the travel needs of men [117]. There is a growing awareness that the collection of gender-sensitive data can no longer be ignored by urban mobility policy makers and planners [113]. It is also accepted that this is quite challenging as daily travel choices and patterns of men and women are influenced not only by transport/infrastructure inefficiencies but also cultural and social norms around gender intersecting with a set of complex demographic, spatial, social and economic characteristics. While the differences between women and men mobility patterns and their use of transport are to some extent recognized, this is rarely used to shape decision making in the sector and majority of planning and investment decisions ignore gender-differentiated needs. Evidence shows that globally women represent the highest share public transport users, yet they lack agency and voice both as users and decision-makers within the sector.

A TRB workshop in 2019 highlighted that research itself may also suffer from gender bias. The conclusions from this workshop included that a certain level of gender bias exists in data collection based on researchers' pre-defined prejudices, stereotyped and furthered traditional assumptions about women's travelling behaviours. This includes judgements that women travel in off peak periods (for shopping etc.) while it is also shown that women now accompany children to school (as they cannot make this trip independently - walking and/or cycling- due to safety concerns) while they are themselves going to school, university or work. Consequently, they are travelling as much in peak hours as off-peak hours.

[10] The two main methods of qualitative primary data collection are field-based and technology-based. Field based data collection includes gathering data on levels of bus occupancy (such as overcrowding), boarding and alighting, origin and destination, passengerr opinion surveys (e.g. satisfaction), quality audits etc. It also includes observational surveys undertaken to understand the behaviour of those being studied without any specific response from the subjects - they are observed as they perform the normal activities. Examples of observational surveys include traffic counts (boarding and alighting counts, vehicle counts etc.), transport inventory surveys etc. Observational surveys can be used to corroborate the results of passenger surveys. For example, traffic counts can be used to validate the results of an origin-destination survey. Passenger interviews and intercept surveys are typically the mainstay of many agencies' data collection efforts and include face to face questioning following a predetermined questionnaire [118]. Demographic and socio-economic surveys, perception surveys, attitude surveys etc. are further examples of passenger surveys. The sampling (size and definitions) depends on the scope and size of the survey and areas being investigated and are usually defined by the researchers. This approach requires large survey teams and are expensive to undertake.

Current literature also points towards the issue of intersectionality and topics like the intersection between socio-demographics, spatial location, access to livelihood, personal security and daily mobility, though critical determinant of gendered travel behaviour, has not been widely studied [113][119]. Ng's research [119] in eight cities (Auckland, New Zealand; Dublin, Ireland; Hanoi, Vietnam; Helsinki, Finland; Jakarta, Indonesia; Kuala Lumpur, Malaysia; Lisbon, Portugal; and Manila, Philippines) show that women tend to use buses more than rail as this mode responds better to their requirements of shorter more frequent trips and is often more affordable than rail. These findings are not typically considered in decision-making and policy framing exercises at the national level.

There remain several primary research questions that are under examined in the literature such as:

- how fear constrains women's movement in the city;
- methodologies to better understand the scope and depth of fear;
- victimisation concerns faced by different groups of women;
- research and methodologies to better understand and document the reasons behind low level of incident reporting; and
- Evaluation of successful policies, measures and interventions that respond to women's needs.

Further work is needed to develop robust methodologies for counting multimodal trips including short walking trips that women make. The current lack of data hampers developing and adapting mobility systems to the needs of women both in terms of routes, scheduling, frequency, tariff structures and designing of the system to enhance personal security, both real and perceived.

Our review of current literature shows a scarcity of gender mobility data and statistics, the need to broaden the understanding about what gender-friendly mobility services are, and to build capacity and resources for cities and government to be able to include gender in transport planning, operations and investments.

SECTION 6: TOOL DESIGN CONSIDERATIONS

Based on research findings, this section outlines some essential strategies to be considered while designing decision making tools targeting GBVAH. Designing of these tools will vary between different contexts depending on the current availability of data, legal frameworks and organisational portfolio of the targeted country and urban areas. However, conducting initial scoping analysis to map the following elements can provide a starting point for tool development.

1. Data availability and gaps assessment

Non-availability of data is a persistent problem. There is a lack of data on GBVAH and its spatial and temporal variations. These variations can be collected through reported incidences of GBVAH but since incidences are rarely reported, it becomes essential to develop protocols for conducting periodical surveys, both qualitative and quantitative, to identify the dangerous routes, spots, areas, transit stops, and timings.

2. Economic Analysis of the problem

Transport is a key enabler of economic growth and provides access to essential public services, such as health, education, and the labour market. This bears significant implications for economic productivity of women. Are the existing cost-benefit analyses able to quantify the economic losses accruing due to restricted or no mobility of women given their perceived and real fear of GBVAH? This review revealed that there doesn't exist cost-benefit methodologies which have the potential to include the benefits accruing from women's security and their increased access to education and livelihood options. This point is therefore framed as a possible action point for future tools.

3. Communication Strategies

Statistics reveal that the literacy rate for Sub-Saharan Africa was 65 % in 2017. In other words, one third of the people aged 15 and above were unable to read and write. Further, a large share of the population does not

access to technology, are living in poverty, and not have access to traditional education platforms. It is thus essential that media and communication strategies are designed around these contextual realities.

Mass media campaigns can be used to broadly challenge gender norms and to promote gender equality targeting users, operators and decision makers. A wide range of media needs to be considered – brochures, leaflets, reports and other printed/web material, radio, television, billboards and popular social media channels. Given the fact that the target populations may have low levels of literacy, usage of images, symbols, pictures are necessary to get the message across to these varied target groups, and further develop radio programmes, videos etc.

Additionally, pre-testing communication materials and tools, and monitoring communication outcomes will help ensure the audience will understand the message in the intended way and prevent wasting campaign resources. For audio-visual materials, it is advisable to record a low-cost version for pre-testing.

For marginalized groups, particularly those experiencing multiple discriminations, mass media may not necessarily be the best way to reach them especially if this is not in a language they understand, or the channel they have access to. Some rural minority communities, for example, may not understand the national, mainstream language, and they may not have proper access to radio, TV or the internet, making print materials more useful in this case (including pictorials for illiterate communities). These communication strategies are pivotal in upscaling of the issue and further work on the topic:

- **Educate the public about harassment -** An essential element in prevention of GBVAH is to eliminate misconceptions about violence against women and girls. All elements of society, including public decision-makers, and key influential figures need to understand that it is a violation of human rights, regardless of when and where it occurs, and that not only should there be zero tolerance for it, but that swift and effective action must be taken to end it;
- **Reinforcing communication strategies** - Even though there are multiple ways to raise awareness and communicate about gender norm change (e.g. drama, conversations, posters, leaflets, social media, training, community-based dialogues, public events) it is important that the different ways of raising awareness and communicating reinforce and build upon each other;
- **Providing information to survivors -** Women and girls who have survived sexual harassment need to know that they are entitled to receive support and redress, and how they can claim these rights. Focused public awareness-raising and information campaigns can disseminate such information and encourage survivors to use appropriate services and demand justice; and
- **Framing new initiatives** - Develop a community awareness strategy to accompany any new initiatives for safe public transport programmes, using gender sensitive communication principles and messaging.

4. Organisational Strategies

The first step in designing organisational strategies is a commitment to adopt an inclusive approach. To that end, it is important to ensure that women are actively engaged in programme design and execution phase and gender sensitive methods are used in designing, implementing and monitoring of transport projects. Further, the specifics of GBVAH can be addressed through:

- **Responsibility mapping** – Existing material points towards lack of material which incorporates situational analysis, particularly in terms of the legal climate and legal frameworks, and the lack of policies and institutional structures related to ending sexual harassment. There is very little information and clarity on the topic both for the users of the transport system, operators, decision makers and policing system at large. Identifying and plotting responsibilities, and public private partnership guidelines are essential given the proliferation of informal transport services. It is essential that all forms of informal transport and taxi companies are made part of the programme design;
- **Operational frameworks for para-transit/ informal public transport** – Are there operational frameworks available to the informal transport operators to understand the problem and extent of harassment on their systems? If not, what should these frameworks contain?;

- **Intersectoral coordination** – Working with the different sectors like land and development authorities, road building, public transport, social development, welfare and employment authorities, justice department and courts, civil society organisations (CSOs). For example, CSOs are the primary advocates and respondents in Nigeria. Employing more females in the public transport system, at all levels, ranging from drivers, conductors to decision-makers will ensure that the issue of GBVAH is not rendered invisible;
- **Reporting and complaint mechanisms** – Develop an easy and reliable reporting and complaints system with appropriate response mechanisms to address incidents of harassment, assault and violence through including all the concerned authorities. It is critically important to assign and clarify organisational responsibilities and convey information on 'who is responsible for what' to the general public. Low threshold strategies like toll-free hotline, smartphone apps and dedicated phone lines can help victims and bystanders report harassment and other crimes in real-time and can provide the starting point;
- **Transit operators, police, and other responsible public agencies** can instigate widespread educational campaigns to raise awareness about the problem and encourage victims and bystanders to report sexual harassment incidents; and
- **Training and capacity-building programs** – Based on our reading of the literature, we believe that there are four main approaches and within each of these a range of strategies would appear to have potential for capacity building:
  - top-down organizational approach which might begin with changing agency policies or practices;
  - bottom-up organizational approach, e.g. provision of skills to staff;
  - partnerships approach which involves strengthening the relationships between organizations; and
  - community organizing approach in which individual community members are drawn into forming new organizations or joining existing ones.

Additionally, developing a package of driver safety and gender sensitization training for public transport drivers and operators is the core module. It is also eventually important to seek to expand this programme to everyone engaged in the provision of public transport, and extending the elements contained in Safe Cities Programme. Additionally, options to make such training should be made part of public transport license requirements:

- **Patrolling protocols** – Survey analyses from across the world reveal that respondents called for police patrols and security cameras on both platforms and transit vehicles to reduce antisocial behaviour.

5. Physical Design Strategies

The urban and transport planning sector needs to recognize the importance of mixed land use policies with transport, especially given that women's primary modes of transport are walking and public transport. Transit-oriented development is necessary to create active spaces where women will not feel isolated and vulnerable to violence. Firstly, there must be an acknowledgement of the importance of public transport links for women's safety in urban areas, especially as they are primarily dependent on public transport. Secondly, tools like safety audits for women that assess the entire journey from home to public-transport stops, public-transport itself, the journey from public-transport to the destination and back are needed. Both recognition of the problem and methods to deal with it must be reinforced with legal mechanisms. Provision of basic infrastructure, like adequate lighting at the stations, on vehicles, and pathways connecting the station, should be made an integral part of physical planning guidelines.

6. Behaviour change workshops

Behaviour change workshops could be organised in two formats. The first and most obvious format is based on communication strategies, but a different format of behaviour change workshops could target the different decision makers and stakeholders. These workshops could be employed to help the different stakeholders first and foremost visualise a decision making tool and secondly, discuss the different steps that need to be undertaken to feed a decision-making tool. For example, the following figure outlines a rough sketch of the decision-making tool which EMPOWER will finally generate. Behaviour changes workshops could assist the policymakers and transport providers to contribute towards an evidence-based approach, imparting

visibility to the problem that women and girls face when they travel. These workshops can take the decision makers from mere problem definition to a structured approach and a package of measures to combat the issue.

Figure 2: EMPOWER Decision Making Tool *(Author: EIP)*

SECTION 7: CONCLUSION

This report started off with exploring the *Where? When? Why?* questions on GBVAH. This literature review highlights that the following risk factors increase the likelihood of GBVAH:

1. Where?

- Poor lighting conditions around transport hubs marking the access-egress to stations, around stops and platforms where the passengers have to wait;
- Unsupervised spaces without the physical presence of police or personnel such as guards or conductors, or without CCTV. It is important to mention that women have personal strategies to address the risk but ultimately, they may also choose not to travel at all;
- Both overcrowding and under crowding increases the risk of female passengers being subjected to sexual harassment and violence;
- Not upgrading earmarked unsafe transit stops;
- Travelling through neighbourhoods with high crime rates; and
- During long waits on deserted stations.

2. When?

Female passengers are especially concerned about travelling at certain times of the day and under certain conditions. Late evenings, night-time and isolated conditions are routinely avoided.

3. Why?

The most evident answer to the 'why' question hinges on cultural underpinnings and consequent unfolding of gendered norms, roles, and sanctioned public spaces. But apart from these intangibles, studies reveal that a lack of protocols by local government greatly increases the chance of GBVAH, which include:

- Absence or non-functioning emergency buttons for passengers and operators;
- Lack of clear codes of conduct and protocols so workers and transport users know how, where and who to address to report incidents and concerns related to GBVAH;
- Lack of legal and regulatory frameworks to address GBVAH; and
- and furthermore, a lack of trust in authorities to acknowledge, file and investigate reports of sexual harassment, assault or violence.

GBVAH is poorly understood in low-Income and lower middle-income countries of the world for several reasons. Underreporting, lack of mechanisms for reporting, lack of women in the transport sector, unclear organisational responsibilities, cultural barriers etc. have exacerbated the problem. The technical dominance in designing both urban and transport planning solutions has almost routinely resulted in design solutions which do not take gender safety and security into account. In light of publicised cases of rape and extreme violence on public transport or associated spaces, both political and public opinion typically hinges on explanations based on culture, inappropriate dressing, time and location of the trip etc. and puts major onus on the victims rather than the perpetrators.

Though it is difficult to battle the social and cultural underpinnings of behaviour and consequently GBVAH, from a short-term perspective, there are interventions within the purview of urban- and transport planning which can be employed to render urban areas more equitable and safer for women. To begin with, urban transport needs to be understood in the broader social context and not exclusively in terms of technologies and problems which can be solved through engineering exercises. Urban transport has to be positioned within the broad landscape of discussing 'crime and public spaces' and must be seen in a continuum of access-egress, transit stops/stations, both formal-informal modes, the physical space inside the transport mode and their intersection with the topic of GBVAH. Further, the physical dimension of this issue needs to be supported by specified training and working protocols at different levels of governance on urban and transport planning.

Designing a practical tool which provides an overview of the following topics could assist decision makers in not only understanding the extent of GBVAH and associated losses, but also give them a framework to start detailing and operationalising further work.

- Data availability and gaps assessment;
- Economic analysis of the problem;
- Communication strategies;
- Organisational strategies;
- Physical design strategies; and
- Behaviour change workshops.

This is potentially the first step in order to create a system which can be subsequently embedded in institutional working protocols. Further, incentive mechanisms for urban and transport authorities based on regular monitoring and validation workshops with women and girls could contribute towards embedding such systems.

On a final note, safe, secure and affordable transport is important in breaking the cycle of gender disempowerment. Not only will safe and secure transport help poverty alleviation, which disproportionately affects women, it will pave the path for women to enter formal education, access health facilities and gain employment beyond the lowest paid and most precarious positions.

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Vectos (South) Limited
Network Building
97 Tottenham Court Road
London
Tel: (+44) 207 580 7373
Email: paul.curtis@vectos.eu
Web: www.vectos.co.uk